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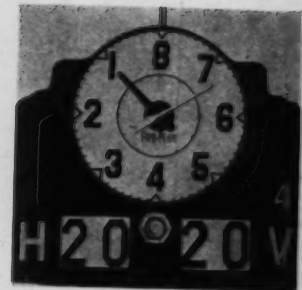
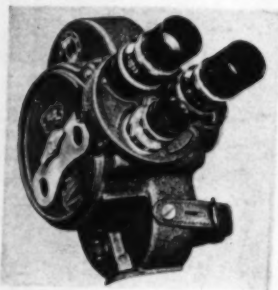
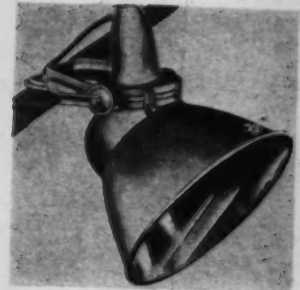
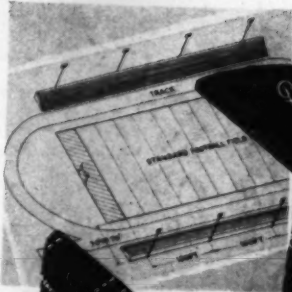
SCHOLASTIC COACH

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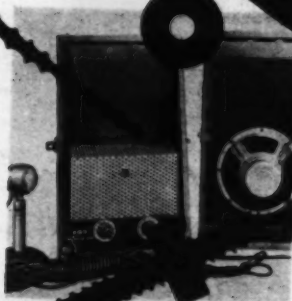
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**Building and
Equipment
Issue**





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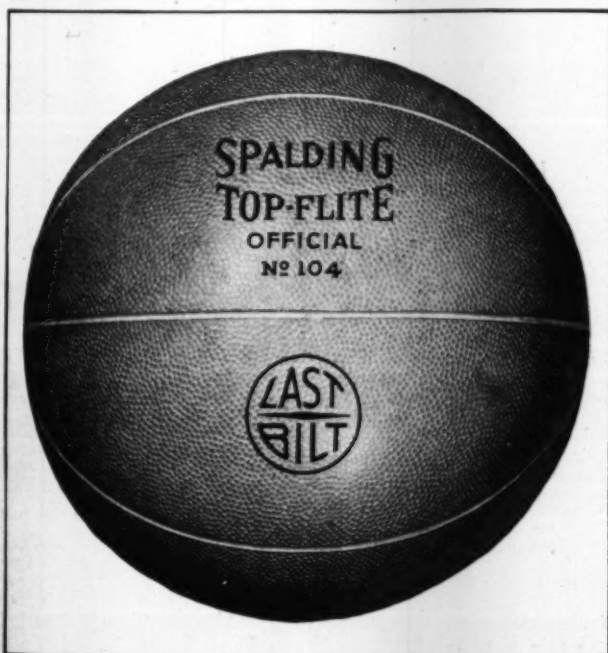
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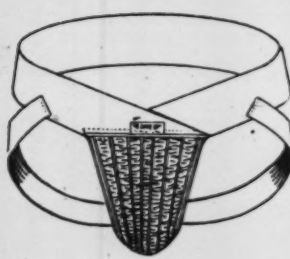
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LITTLE FALLS

NEW JERSEY

SCHOLASTIC COACH

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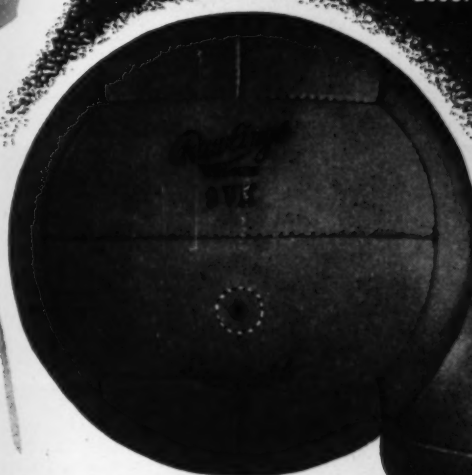
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If it's a Rawlings Volley Ball, it's the best that can be had. As in all other Rawlings athletic equipment, the most carefully chosen materials combined with expert designing and skilled workmanship assure the Quality that's known as the *Finest In The Field*.



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See your dealer now for early delivery.



IT PAYS TO PLAY

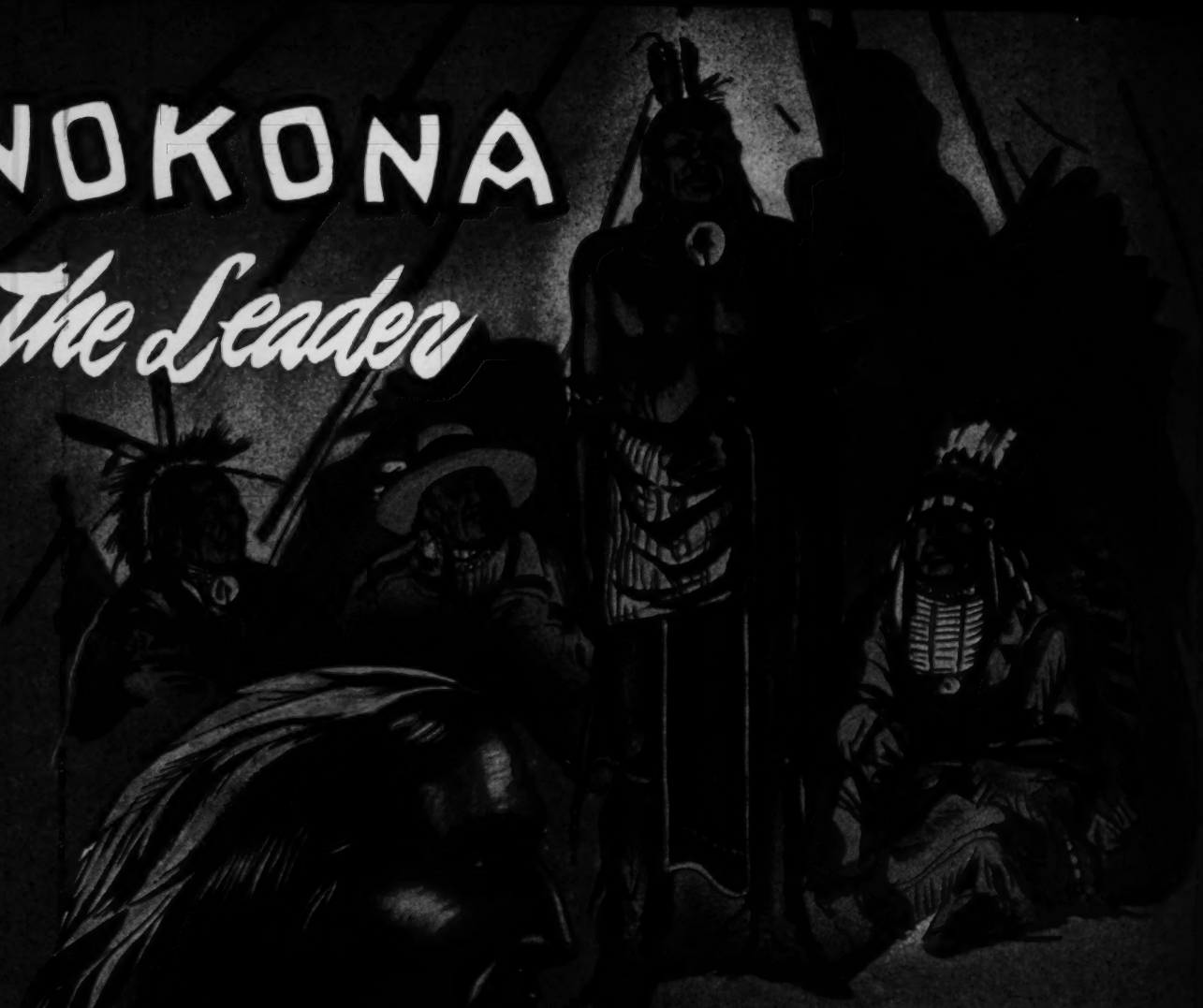
Rawlings Athletic Equipment

THE FINEST IN THE FIELD!

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NOKONA

The Leader

A dark, atmospheric illustration of Chief Nokona standing in the center, wearing a feathered headdress and a fringed garment. He is surrounded by other members of his tribe, some seated and some standing, all in traditional attire. The scene is set against a dark, textured background.

The rugged fearlessness of Nokona, Chief of the Comanches, was the most stirring inspiration we could use when designing and manufacturing our line of athletic equipment . . . for as Nokona led his tribe with strength and endurance, so does Nokona Leather Goods lead the athletic leather goods field in strong, hard-wearing equipment that outlasts the rigors of active usage. When you want fine, sturdy athletic leather gear . . . select from Nokona's line of fine-quality Leather Goods.

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Your New Gymnasium . . . by O. R. BARKDOLL

SCHOOLS that completed building projects just before the war are now continually entertaining administrators and board members who are contemplating post-war buildings.

It is interesting to follow these groups through the school plant. When they reach the gymnasium, the administrator invariably inquires about floor space for the physical education program.

The board members ask about the seating capacity, home and visiting team facilities, accommodations for officials, entrances, exits, and ticket booths.

Since the physical education facilities will be used about 1,000

hours each year, and the athletic plant 40 hours, anyone can see where the emphasis should be placed. At the same time, the plans should make allowance for huge crowds.

The athletic program should grow out of the physical education program, and furnish the motivation for most of the activities in it.

One of Illinois' most successful basketball coaches offers a solution to the floor space and spectator problem in the new gymnasiums that will soon be under construction.

Most of the newer gymnasiums—W.P.A. projects built during the last decade—have six rows of folding or

Should your new gymnasium be a basketball theatre or a physical education classroom? It can be both, says O. R. Barkdoll, assistant state director of health and physical education in Illinois.

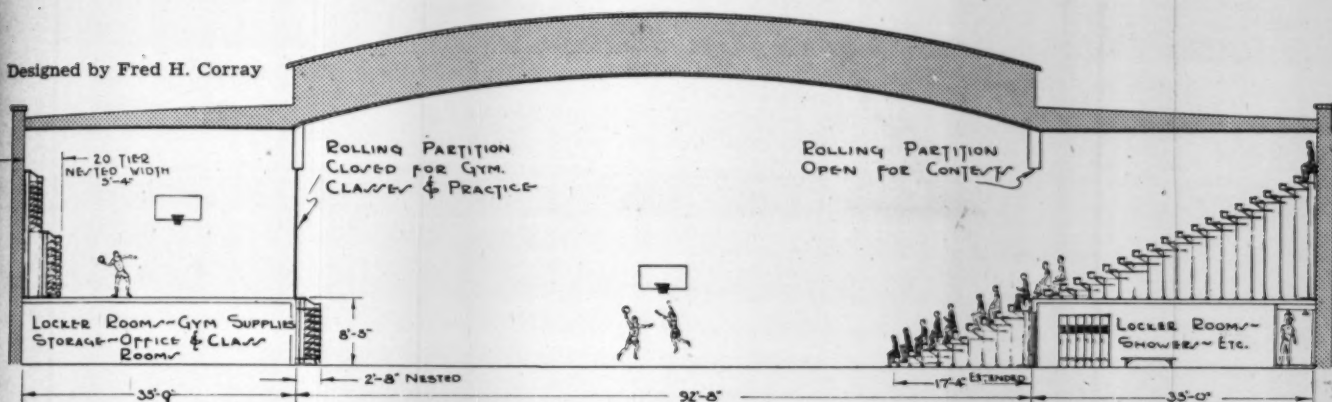
knockdown bleachers on the playing floor. Above these is a second tier made of permanent, concrete bleachers on an oblique pattern.

The suggestion is to lay down ten rows of folding bleachers on the playing floor and to build another floor at the height of the tenth row, installing a second set of folding bleachers on this floor.

When these seats are rolled back, the usable floor area is increased

(Continued on page 62)

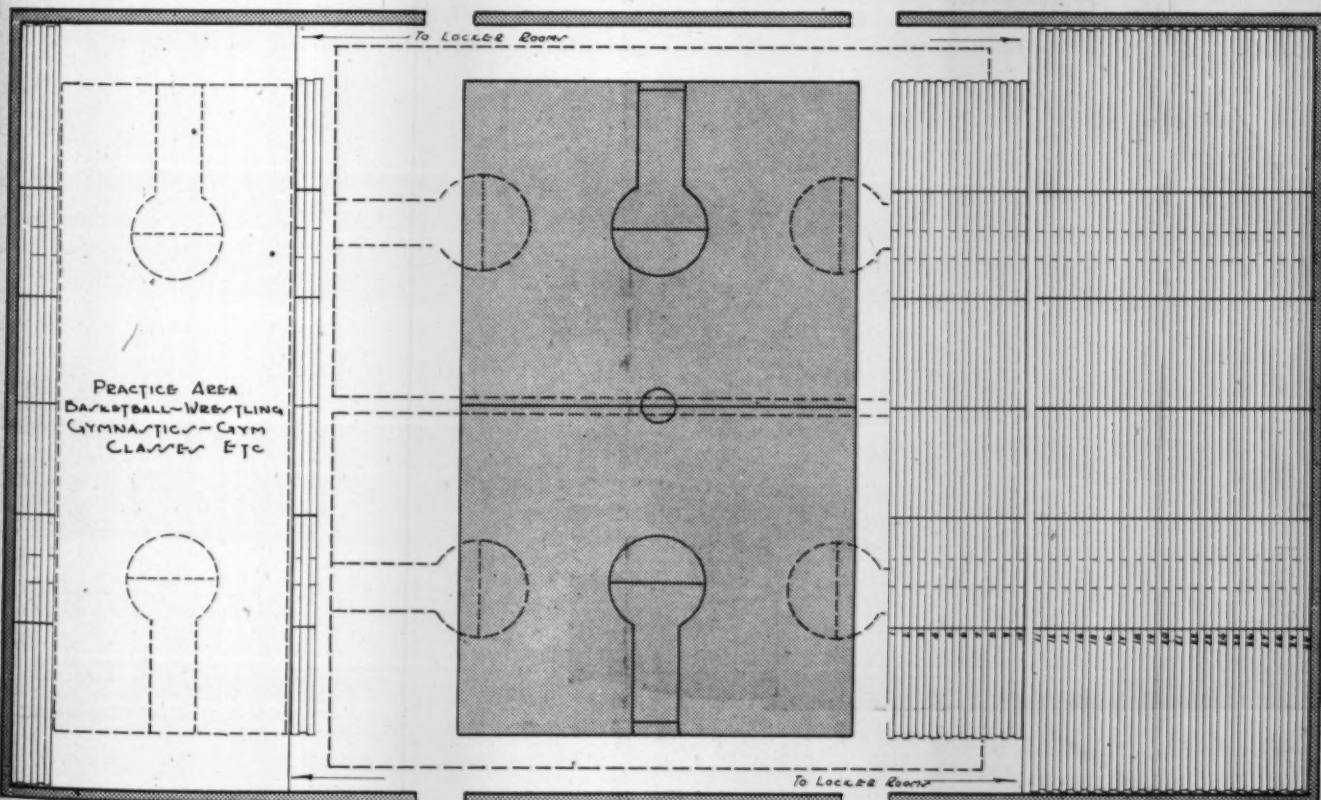
Designed by Fred H. Corray

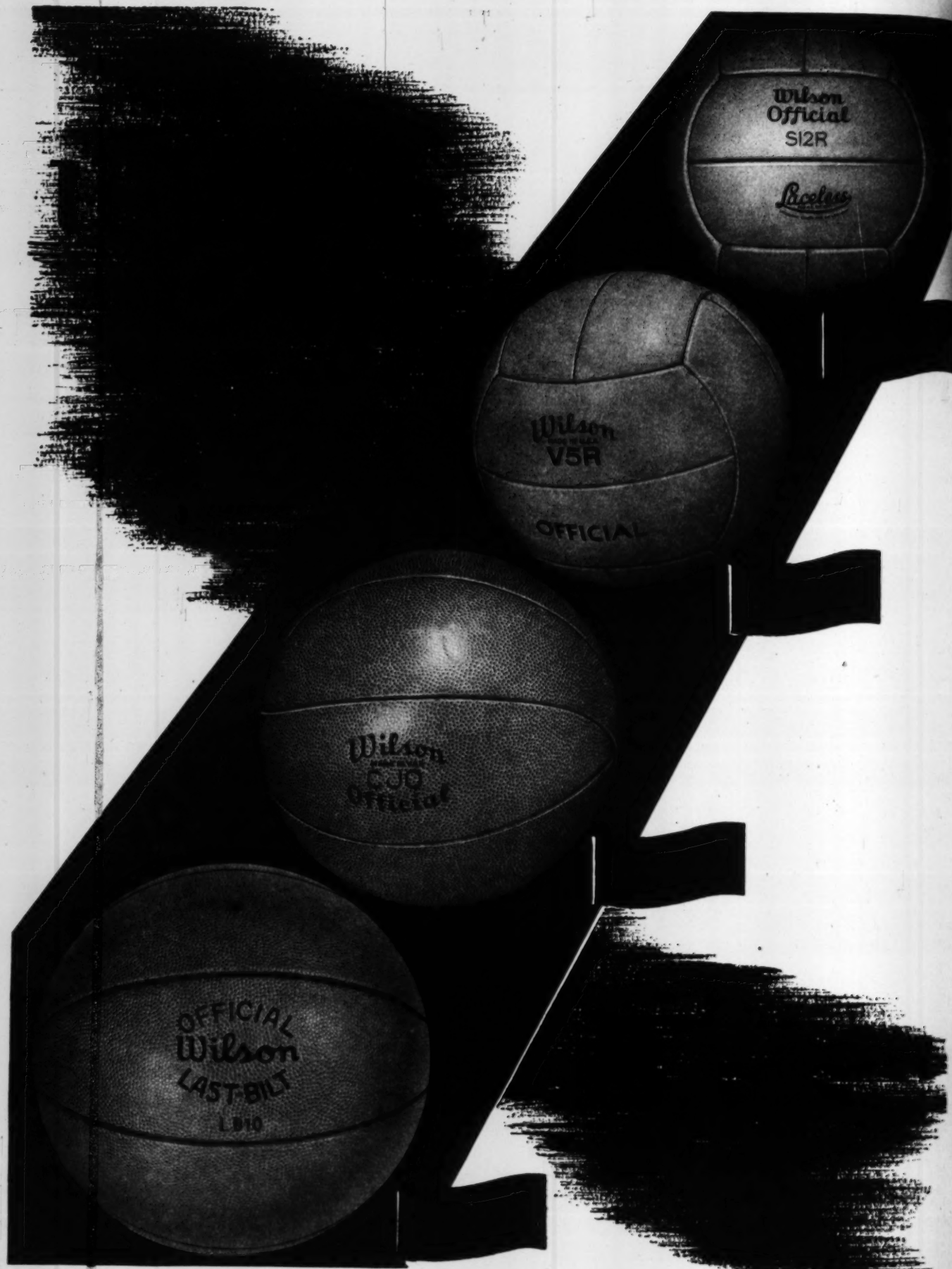


TELESCOPING BLEACHERS
NESTED FOR GYM CLASS

ELEVATION

TELESCOPING BLEACHERS
EXTENDED FOR CONTEST





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LIGHT YOUR REC CENTER!

JUST a year ago, in the January issue of *Scholastic Coach*, we introduced a photographic plan of a model community recreation center which created such widespread interest that we are now covering it in greater detail, particularly in regard to the floodlighting installation.

The recreation center, as shown in the plot plan, encompasses approximately 20 acres adjacent to the school building. This is a lot of ground. But the trend is toward taking the schools away from congested areas (where possible), so that the students will enjoy more freedom of movement with less danger of traffic accidents.

At any rate, the construction of an athletic-recreational plant adjacent to school buildings will completely centralize the community's youth activities and alleviate the transportation problems which now exist.

The plan (on pp. 8-9) may be categorized as a project, to be constructed on a long-range basis.

The ideal starting point for the athletic phase of the center might be the all-purpose field combining baseball and football.

In hot football communities, the next step might be the construction of the football stadium. If the grid game isn't too popular, facilities for softball, tennis or any other sports complying with local interests, might prove more feasible.

Normally the major needs of a school athletic program will be filled by the combination field and stadium. The combination field may be constructed for about \$3,000. The stadium would involve anywhere from \$5,000 to \$10,000, depending upon the type of construction.

A rough estimate of the cost of the entire center, excluding the cost of the land but including the club

house, would come to about \$200,000.

The model community center would also furnish facilities for other intramural and interscholastic activities, such as swimming and tennis. In the average community, however, the swimming pool, softball fields, ice skating rink, bowling green, and tennis, shuffleboard, horseshoe, badminton, and handball courts would be used by the community as a whole.

The advantages of a centralized activity plant are very apparent. First, it makes possible overall recreational supervision. Second, it reduces groundkeeping costs. Third, it lends itself to better parking facilities. And, fourth, it tends to focus the public's sports eye on one

area, instead of spreading it in several directions.

Having all the recreational facilities in one place presents an impressive picture. The compact arrangement is as pleasing to the spectator's eye as to the athlete's.

Because of peculiar physical conditions, it may not always be feasible to place the center right next to the school. But, wherever located, the model community recreation center is a step in the right direction.

A community modern enough to undertake a recreation center, will wish to keep pace with all the modern developments. It will want to install floodlighting for all or most of the facilities. The installation of lighting units enables the available facilities to do double duty—that is, they can be used both day and night.

The financial advantages of floodlighting spectator sports has been proven time and time again. The
(Continued on page 18)

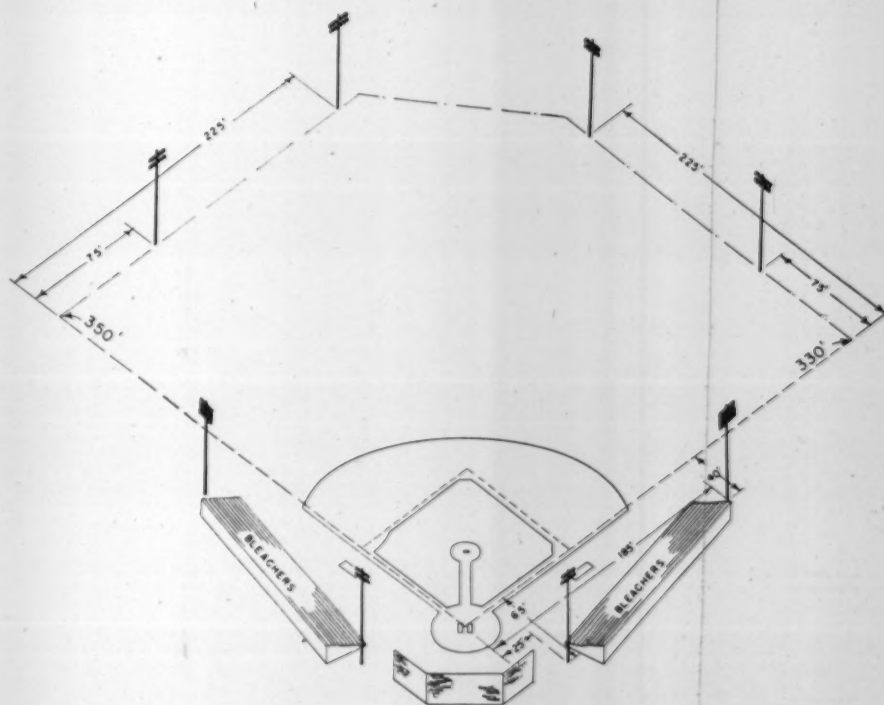
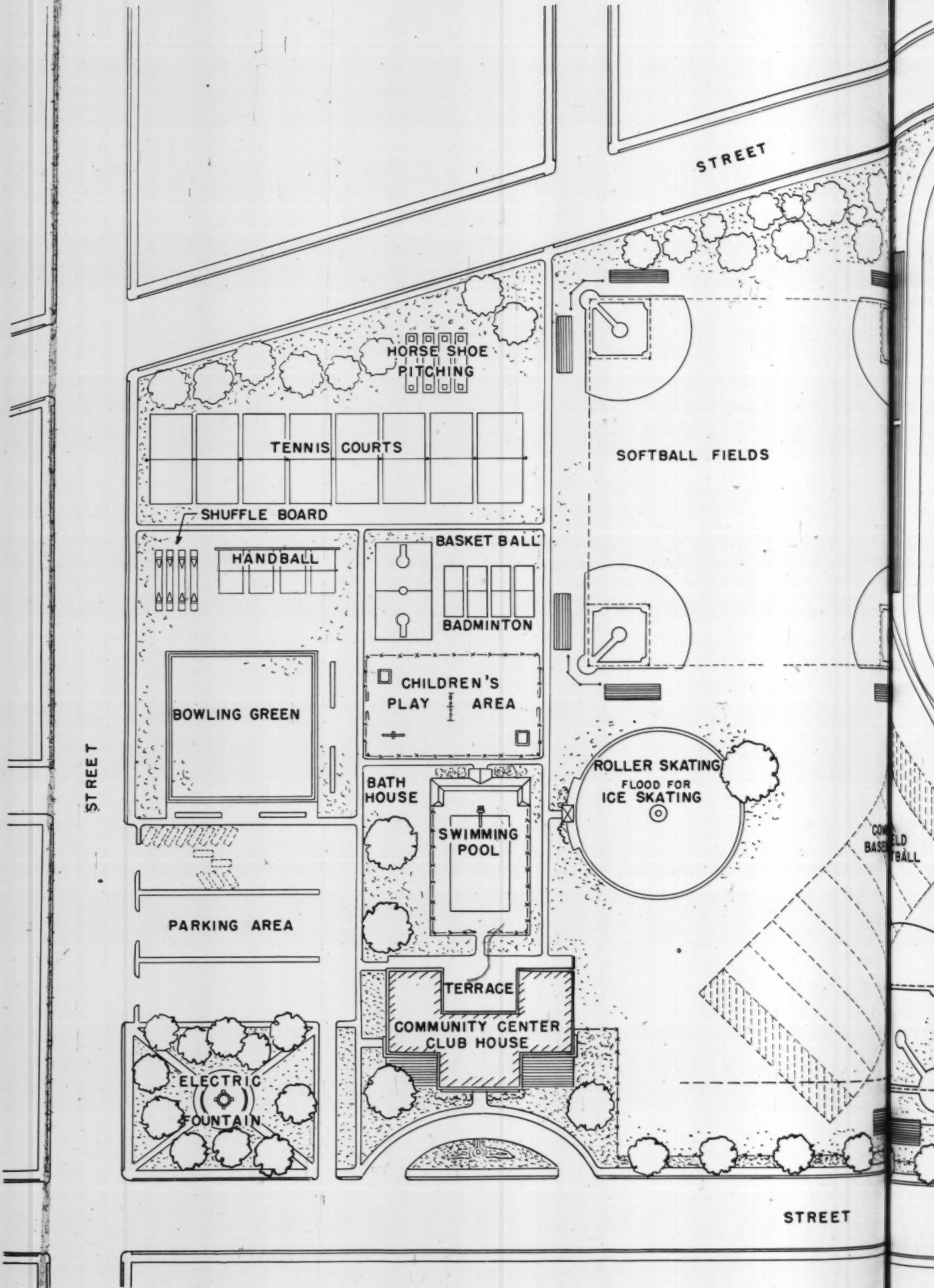


Fig. 1: Semi-pro baseball unit requiring eight 80-ft. poles and 120 floods.



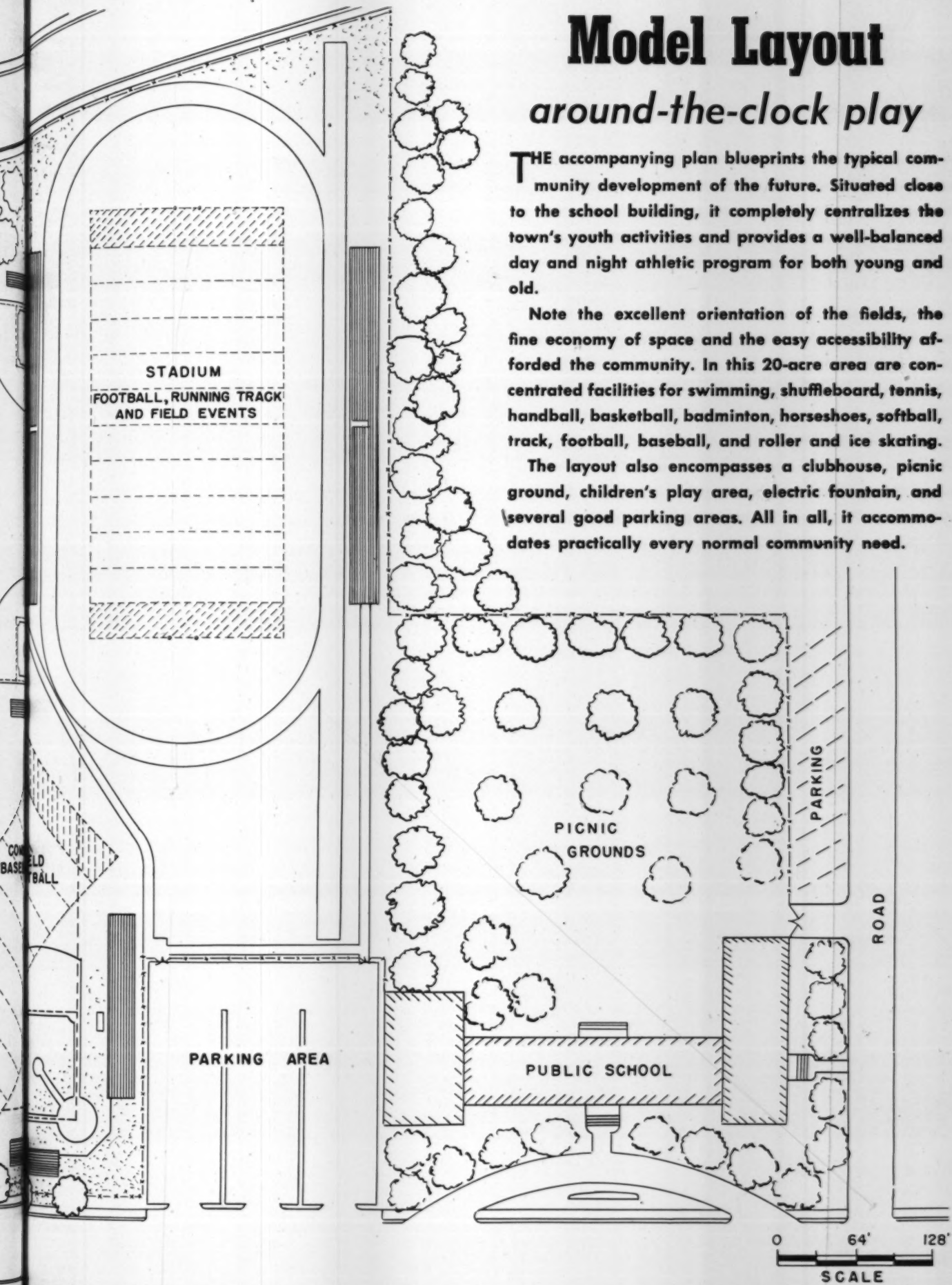
Model Layout

around-the-clock play

THE accompanying plan blueprints the typical community development of the future. Situated close to the school building, it completely centralizes the town's youth activities and provides a well-balanced day and night athletic program for both young and old.

Note the excellent orientation of the fields, the fine economy of space and the easy accessibility afforded the community. In this 20-acre area are concentrated facilities for swimming, shuffleboard, tennis, handball, basketball, badminton, horseshoes, softball, track, football, baseball, and roller and ice skating.

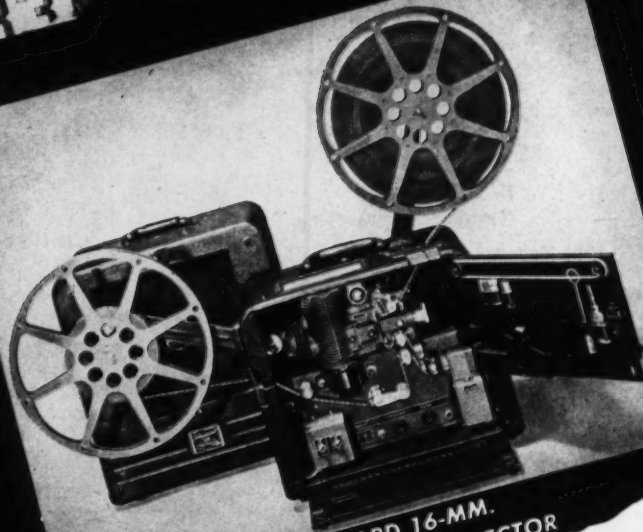
The layout also encompasses a clubhouse, picnic ground, children's play area, electric fountain, and several good parking areas. All in all, it accommodates practically every normal community need.



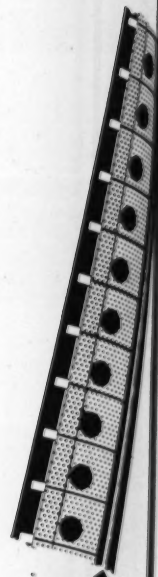
LIGHTWEIGHT 16-MM.
SOUND-ON-FILM PROJECTOR



STANDARD 16-MM.
SOUND-ON-FILM PROJECTOR



16-MM.
SOUND-ON-FILM



35-MM. SLIDE FILM



PROJECTORS AND FILM FOR SCHOOLS AND COLLEGES

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FOR THE COACH...

Visual Aids



THE use of visual aids in coaching is probably as old as the profession itself. Even the hoary books on sports contain drawings and photographs which, crude as they are, serve their purpose well.

Scholastic Coach has always appreciated the tremendous potential of visual aids and has, since its beginning in 1931, relied greatly on diagrams and photographs to supplement its coaching articles.

Now for some practical advice on how you coaches can best exploit the potentialities of modern visual aids in your coaching.

MOTION PICTURES

The motion picture devices most feasible for school use include the 16-millimeter motion picture camera and projector. The most popular type of projector in use today is the sound unit.

A piece of 16-mm. sound film, in actual size, is shown on the facing page. As you can see, there are sprocket holes on only one side of the film. The other side carries the sound track, which appears as a wavy line.

Since silent film does not have a sound track, it has sprocket holes on both sides of the film. These sprocket holes catch and pull the film through.

It is important to remember that, while silent film can be run through a sound projector, *sound film cannot be run through a silent film projector.*

The reason for this is simple. The sound film, lacking two sets of sprocket holes, will be ruined when run on a silent projector.

Where silent films are run on sound projectors, it is possible, with most projectors, to plug in a microphone so that the coach may accompany the film with a running commentary.

When a sound picture is being run on a sound projector, the sound may be cut off, if the coach so desires, by merely turning off the sound apparatus.

Motion pictures are, in the main, obtained in two ways. First, they may be purchased or rented from various outlets.

A number of reputable film companies are now busily engaged in turning out unusually helpful coaching films. These pictures analyze the subjects (football, basketball, baseball, swimming, tennis, etc.) in vivid detail employing all the modern techniques of slow motion, stop action, and animated diagrams.

Many of these films come in color, as well as black and white, and vary from simple one-reelers to elaborate six-reel jobs.

Some schools take their own pictures. The sound projector comes in handy for these home-made movies. The instructor may use the sound apparatus to amplify his voice when showing the film to large groups. He can make his voice as loud or as soft as he wishes.

MOTION PICTURE CAMERA

The 16-mm. camera comes in many sizes and prices. It can be as elaborate as the professional apparatus used in Hollywood. But in general, the spring-driven type with the lenses in a turret is suitable for all uses. (See illustration on facing page.)

This unit holds sufficient film to shoot any action of reasonable length. It is easily reloaded and may be held in the hand or mounted on a tripod.

It has a mount for three lenses, any of which may be used by rotating the turret mount. No attempt will be made to describe the type of lenses used. This information may be obtained from your photographic dealer.

The advantage of having three lenses is this—no matter how near or far the action is from the camera, you have a lens that will catch the action in considerable detail.

Also remember this, the same camera with the proper film will

take pictures in black and white or in color.

PORTABLE SOUND PROJECTOR

Sound projectors are pretty well standardized. They usually come in two carrying cases, one for the projector and one for the loud speaker. They have sufficient power for use in either a small room or in a fairly large auditorium.

The size of the picture thrown on the screen varies roughly from about three feet in width to twelve. The film can be stopped at any point without danger of burning. What's more, the film can be reversed freely to repeat important sections.

The sound apparatus may be used for a variety of purposes. It can, with a plugged-in microphone, be used as a public address system. A turntable can also be plugged in and records played. Where greater volume is needed, additional speakers may be added.

LIGHTWEIGHT SOUND PROJECTOR

Coaches will be interested in a new lightweight 16-mm. sound-on-film projector. This unit is not designed for large audiences. It is ideal, however, for the coach who would like his own projector for screenings in the athletic office or locker room.

It weighs about 27 pounds, has everything in one case—projector, screen and speaker—and is very simple to operate. An illustration of the outfit is shown on the facing page.

SLIDE FILMS

Slide films are not motion pictures. They are individual frames on a strip of 35-mm. film, which are projected one at a time. (See facing page for a section of a slide film in actual scale.)

Remember those old glass slides that were once used for illustrated lectures? These pictures—on—glass were inserted into a projector and thrown upon a screen. They were clumsy, easily broken and took some time to manipulate.

Slide films are similar in purpose, but have none of these "bugs." The
(Concluded on page 59)

That Home on Range

by J. L. Murphy, Jr.

One of the finest rifle-range engineers in the country, J. L. Murphy, Jr., serves the Range Planning Section of the National Rifle Association.

RIFLE marksmanship and target shooting competitions are now an accepted part of the secondary school athletic program. Over 600 schools are operating junior rifle clubs chartered by the National Rifle Association.

These clubs have available to them a complete program of marksmanship instruction, firearms safety education, and an extensive series of qualification ratings measured against par scores, postal matches with other club teams throughout the country, local leagues, and national championship tournaments.

Our rifle people are looking forward to lush years. Our teen-age boys and girls are fascinated by the sport. Instructors are fairly easily and quickly trained. Equipment is once again being manufactured, and government assistance along such lines is available.

The principal drawback remains the lack of an adequate place to shoot safely. And that's the chief object of this article. It blueprints the principal working elements of an indoor range as a guide for school officials, architects and engineers.

Safety. The prime purpose in the planning of an indoor rifle range is *maximum shooting safety*. Maximum safety embraces the elements of the range itself and the common-sense precautions that come under the heading of *complete range discipline*.

No range will ever be safe for the thoughtless student who points his rifle, loaded or unloaded, at another; who fires his gun in any direction other than the target, or who fires without being thoroughly familiar with the loading and operation of his firearm.

Rifles must be kept unloaded and the breech actions open until the marksman is in position at the firing point with his weapon pointed toward the target.

Remember, it is the *safe* range that attracts greater attendance and encourages wider support.

Room required. There are unlimited possibilities for constructing indoor ranges. Almost every educational building has some suitable

space which is large enough and which can be easily and economically converted into an indoor range.

Indoor ranges for school purposes can be divided into two general classes—the movable or non-fixed range and the permanent installation. The non-fixed range is one built in an area used for purposes other than shooting, such as a gymnasium, auditorium, class-room, etc., where all range equipment must be movable so that the room can fulfill its dual purpose.

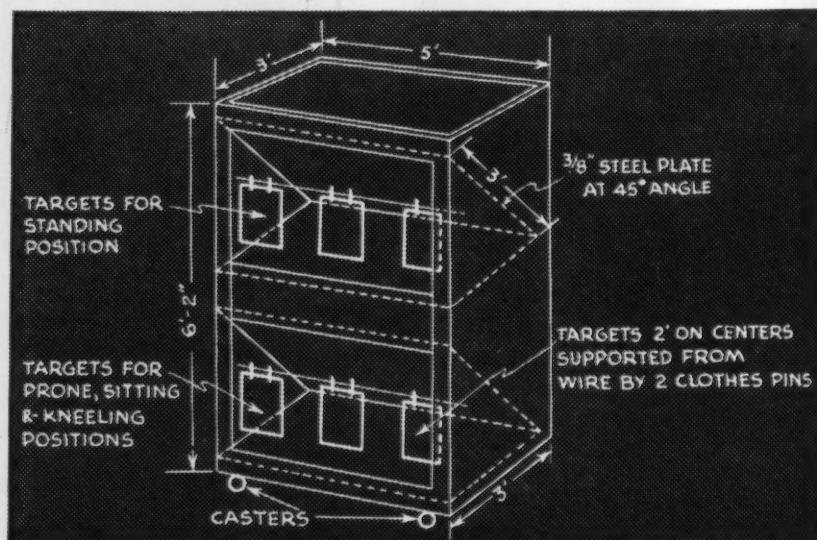
The permanent range is one built in space allocated for shooting alone. Equipment such as the bullet stop, target carriers and firing line accessories are fixed.

The *space requirements* for both types are, to all practical purposes, the same.

The N.R.A. standard indoor shooting distance for small-bore rifles and hand-guns is 50 ft. measured from the firing line to the target. (The old 60 ft. and 75 ft. distances are now practically obsolete except for law enforcement shooting courses.) No part of the shooter's body is allowed to touch the ground in front of the firing line although the muzzle of the firearm may project over it.

In addition to the official distance of 50 ft. (this measurement is the same for both movable and permanent ranges), there must be room for a bullet-stop. This space will be from 3 to 8 ft., depending on the type of backstop used. Behind the firing line a space of about 5 or 6 ft. should be allowed for shooting mats, and an additional 2 to 6 ft. should be left for a passageway.

Thus the total length for the range proper should be between 60 and 70 ft. Additional space is desirable for spectators, instruction,



Working plans for a roll-away type backstop.

NOW is the time to plan your

CROUSE-HINDS Lighting Installation



.... for **next** season's games

Under present conditions it pays to be far sighted in planning sports lighting. Right now is none too early to lay plans for next season's lighting in order to avoid possible disappointment later on.

Crouse-Hinds lighting engineers have been planning the lighting of athletic fields large and small ... ever since the beginning of sports lighting, and this long experience is at your service. They will gladly recommend the proper selection and arrangement of floodlights for any application. Send drawings and details. Bulletins covering NEMA standard plans for the lighting of baseball, football, and softball fields are available.

By acting promptly you may be able to have your lights installed in time for Spring football practice.



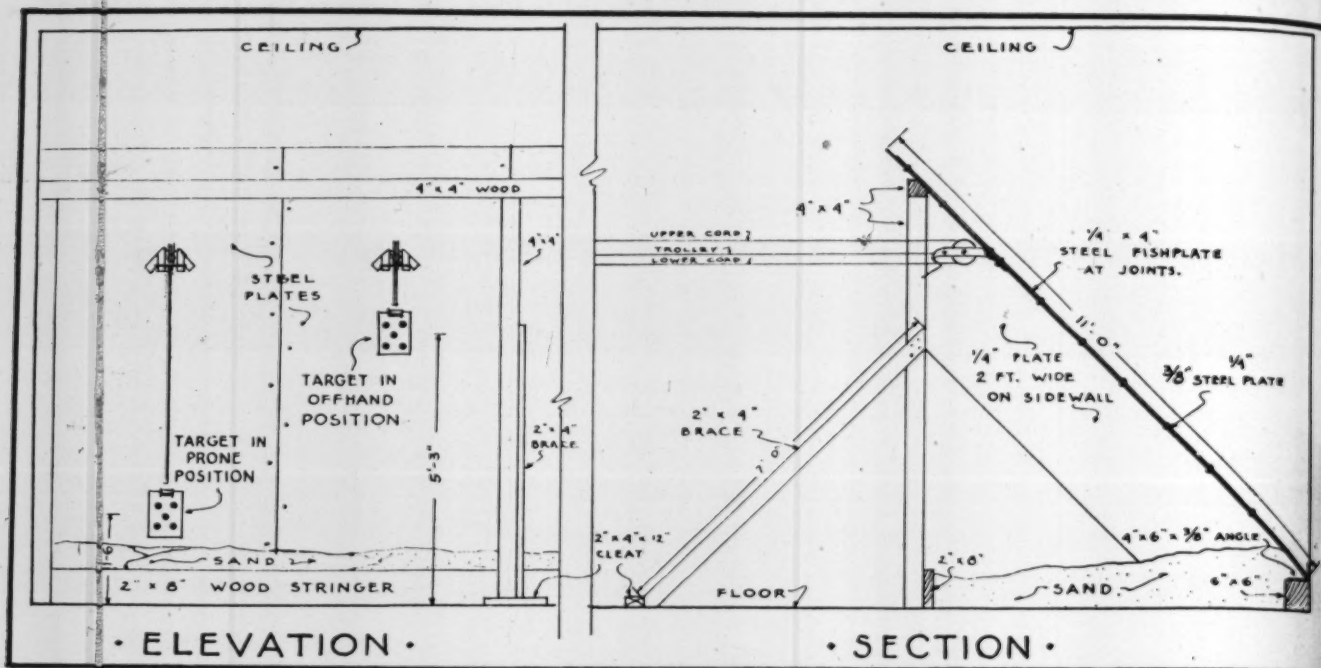
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A detailed blueprint for building a permanent type bullet stop for the rifle range.

armory, office, storage, rest rooms, etc.

Crowded firing points do not permit accurate shooting. On a school range designed primarily for rifle shooting, the minimum width of the firing points should be 4 ft. 6 in., with 5 ft. being desirable.

The firing points at each side of the range must be a minimum of 5 ft. (5 ft. 6 in. is better), since prone shooters lying on an angle of almost 45° require room for their outstretched legs.

Left-handed shooters should use the firing points at the right side of the range to avoid interfering

with right-handed shooters. Thus the need for a minimum of 5 ft. at that point.

Bullet-stops. The recommended construction for the bullet-stop of a permanent range is discussed first. It should be of steel plate heavy enough to be entirely adequate for the caliber cartridges used.

Wood, stone, concrete, or brick barricades are not safe, as continued firing, even with .22 caliber ammunition, will eventually drill large cavities into them; even a slight chipping of the surface will cause dangerous ricochets.

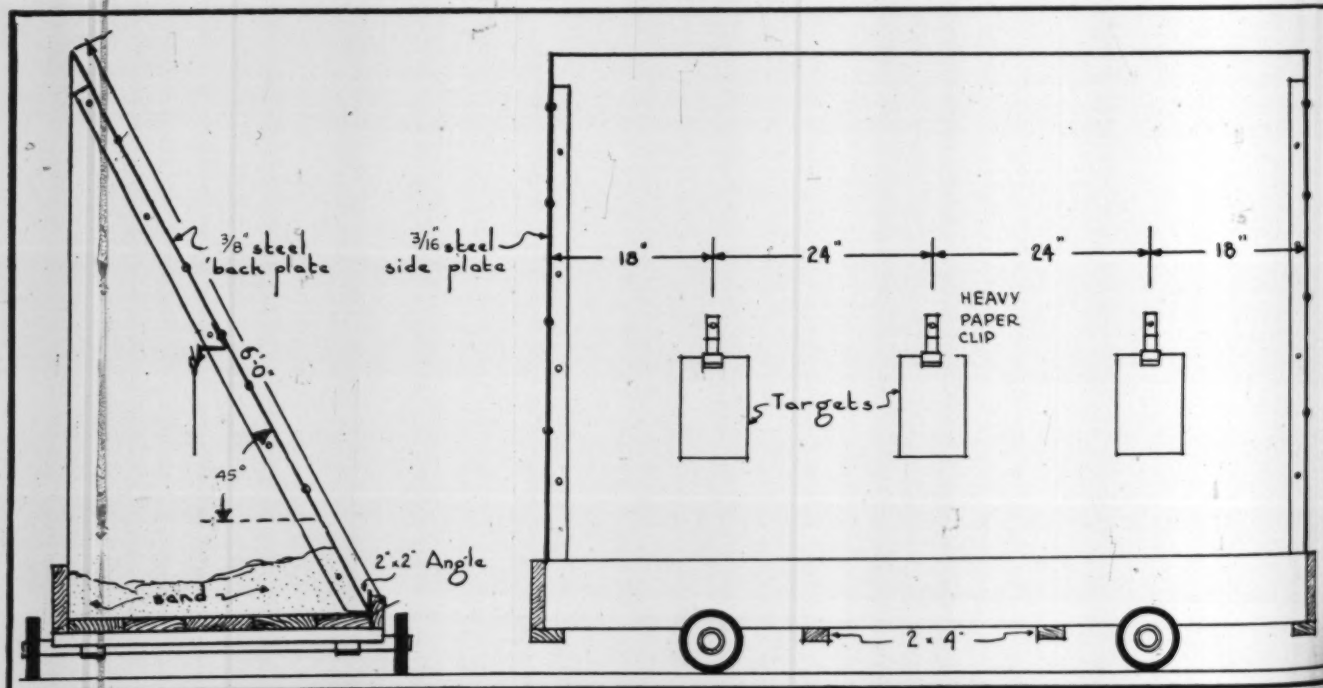
A solid timber back-stop is also

unsatisfactory since wood is very quickly chewed up by the constant peppering of bullets.

The most permanent and economical bullet-stop in the long run is a steel plate, $\frac{3}{8}$ in. thick, running the width of the range and placed at an angle of 45°. A plate of this thickness will very effectively stop the .22 caliber bullet and will last a long time.

The plates of the back-stop should be butted tightly together and bolted to an angle or tee at the joints using countersunk heads on the face. Ship-lap joints or welded joints can

(Continued on page 47)



A working drawing to aid in the construction of a portable type bullet stop.

DOWN THE FLOOR

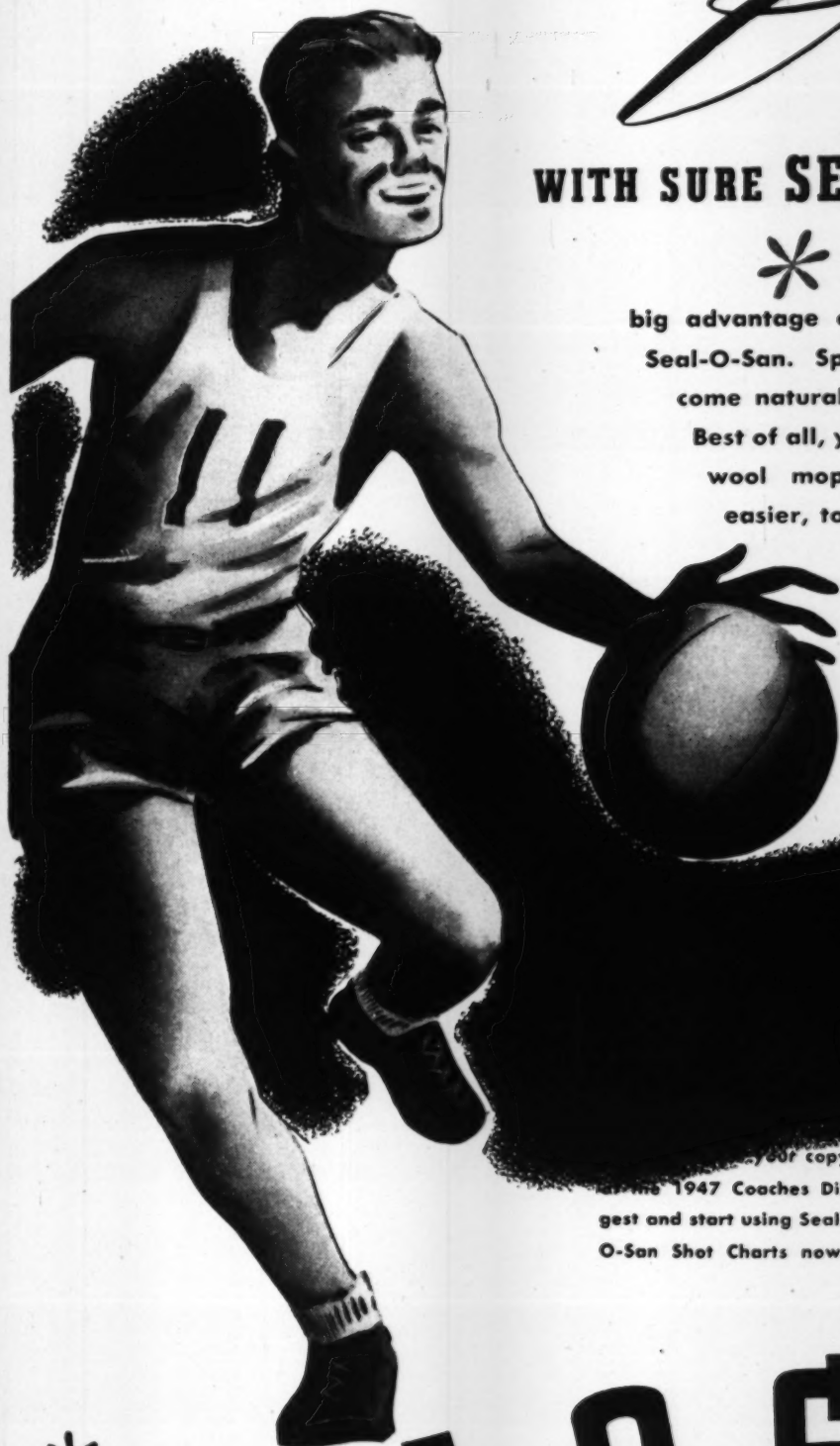
fast

WITH SURE SEAL-O-SAN FOOTING



No danger of slipping! That's the big advantage of treating your gym floors with Seal-O-San. Speedy footwork and fast breaks come naturally when footing is sure and safe. Best of all, you apply Seal-O-San with a lambs-wool mop, inexpensively. Maintenance is easier, too. Get the facts now.

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Get your copy of the 1947 Coaches Digest and start using Seal-O-San Shot Charts now.



* **SEAL-O-SAN**



GYMNASIUM FLOOR FINISH

ASK ABOUT THE DERMA-SAN CONTROL SYSTEM FOR ATHLETE'S FOOT

by EMIL LAMAR

It's a Steel Hanger!

ANYBODY looking into the equipment drying room at Berkeley High School will notice a row of football uniforms suspended neatly on a new type of steel hanger. The Lamarway Drying Hanger (Pat. 2298491) is probably the only hanger extant that is more than a mere suspending device. It has also been designed to facilitate the drying out of equipment.

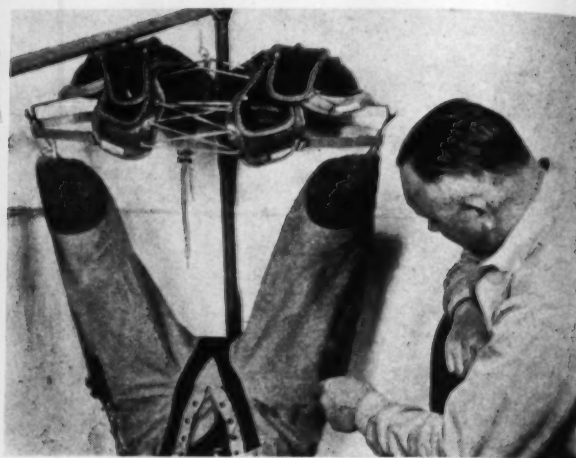
In many schools, no measures are taken to assure the athletes of dry equipment every day, despite the fact that damp uniforms are both unhygienic and discomforting to wear. After coming off the practice field, the boys are permitted to toss their wet garments into the lockers where they lie untouched until they are put on again.

At Berkeley, the new type of hanger assures every player of dry gear daily. Football pants, for example, are suspended upside down and flared so that they appear inflated. This permits the air to circulate throughout the garment and to dry it quickly and thoroughly.

The shoulder pads rest securely on top of the hanger where they can be ventilated easily. Jerseys, sweat-shirts, supporters, socks, and helmets may also be suspended on the hanger.

Upon entering the locker room after practice, the players shed their uniforms and immediately suspend them on the steel hangers. The suits are then turned in to the drying room where they are checked in by the manager and hung in their proper place.

Each hanger has a stenciled number which fits into a numerical scheme on the pipe forms inside the room. The suit is turned in *before* the boy takes his shower as a precautionary measure against the loss of any items. We have learned that when the equipment is left scattered in front of the lockers during



Emil Lamar, physical education instructor and track coach at the Berkeley, Calif., High School, is recognized as one of the country's foremost authorities on the athletic plant. His book, *The Athletic Plant*, ranks among the best texts on the subject published in recent years. An artist in his own line, he has invented, and patented, a new type of steel hanger for athletic equipment.

the post-practice shower, some of it often goes astray.

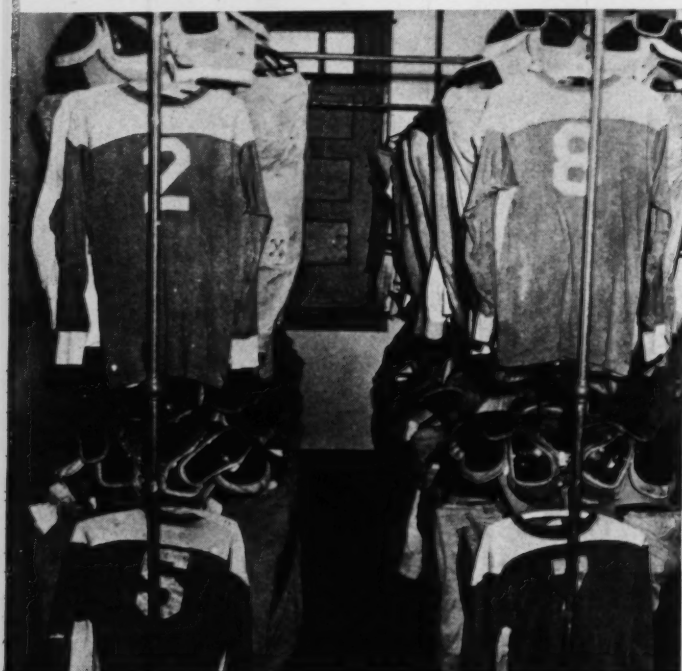
When the boy comes to practice next day, he lines up at the issue window of the drying room and calls for his suit by giving his hanger number to the manager in charge. The player then goes to his locker, gets into his uniform and puts the empty hanger away with his street clothes.

On the afternoon of the game, the managers substitute game uniforms for the practice togs. This takes little time, so well are things organized. When the players call for their suits, they are there waiting for them. The whole squad is served in less than five minutes, each player receiving his entire outfit on one hanger.

The Lamarway hanger was installed in 1941, and for the first time in years our inventory showed no loss in any of the wearing items. The equipment also showed surprisingly little sign of wear, especially the shoulder and hip pads.

The reason for the excellent condition of the shoulder pads is due to the fact they were never folded over and stuck into a pair of pants, a common practice that causes the leather to warp. Then, too, the sponge rubber lining in both types of pads was never exposed to excessive heat in the drying room.

The secret of proper, harmless drying is good circulation of air around the garments with very little heat. Too much heat has a deteriorating effect on such materials.



The drying hanger in action in the Berkeley High stock room.

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Light Your Center

(Continued from page 7)

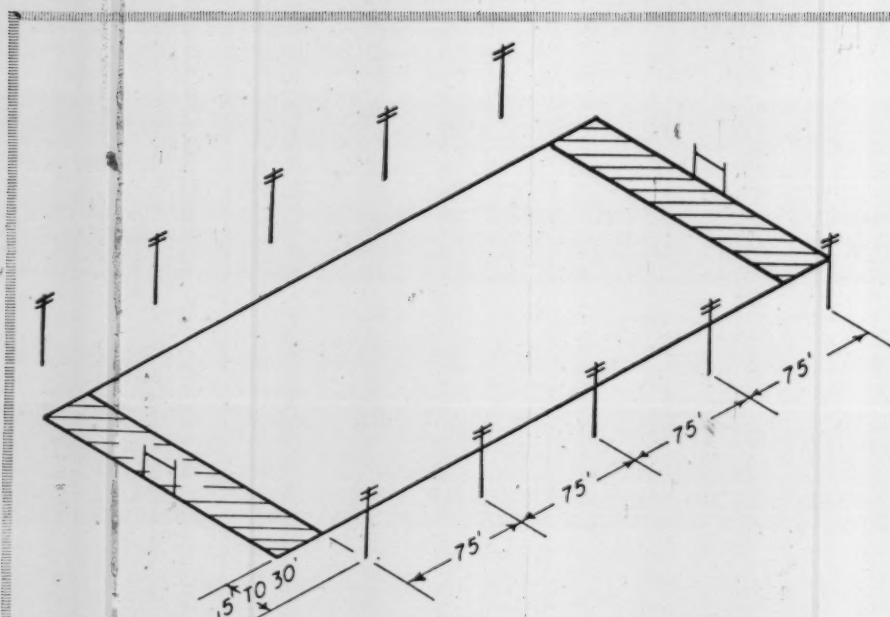


Fig. 2: The 10-pole layout for football, 75 ft. apart, for Class A, B or C.

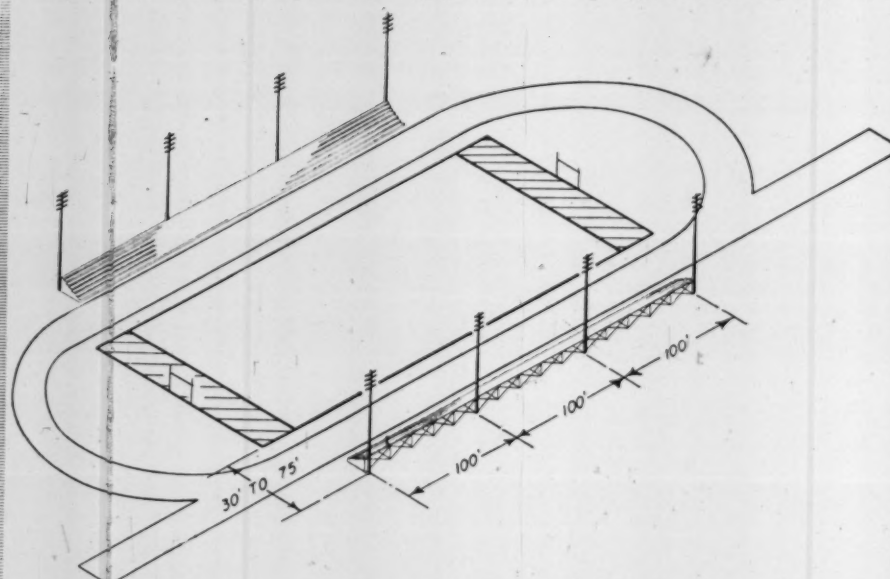


Fig. 3: An eight-pole installation with 16 lights on each (Class A, B or C).

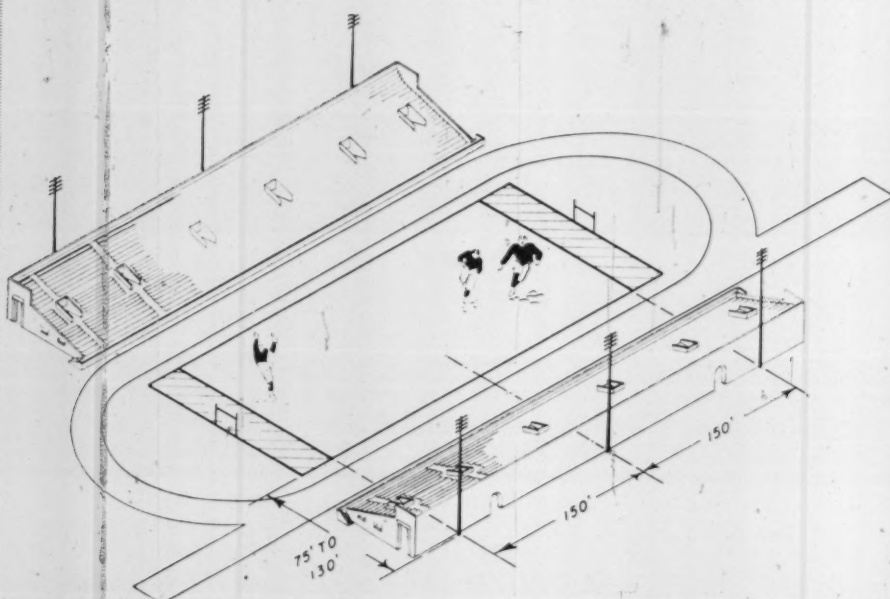


Fig. 4: A six-pole unit with 144 floods on each mounted at 100 ft. (Class A).

current trend is toward lighting recreational facilities to give the recreation-hungry public more time to enjoy its leisure hours.

Better health for all is the most important result. Recreation lighting extends the operational time of the facilities by one-third, and therefore makes possible a proportionate reduction in the number of facilities required.

Communities which provide adequate night-time recreation for their youth will also benefit by a reduction in juvenile delinquency.

In 1930, when sports lighting first came into practical use, many "doubting Thomases" questioned the wisdom of it. They viewed it as a passing fancy. In the ensuing 15 years, floodlighting took firm root and became a prominent part of the American sporting scene.

The table (on page 22) itemizes all the sports included in the model community recreation center and indicates the number of poles, recommended mounting heights, number of floodlights, lamp sizes and the estimated cost of the equipment and its installation.

The sports which have been the object of most of the lighting to date have been baseball, football and softball. Fig. 1 shows the detailed layout of a baseball diamond lighted for municipal or semi-professional play. The installation consists of eight 80-foot poles and 120 floodlights in accordance with the National Electrical Manufacturers' Association recommendations.

Figs. 2, 3, and 4, reveal in detail the three different types of lighting employed on football fields in accordance with NEMA Practice.

In all cases the difference in the amount of lighting equipment needed is determined by the distance of the poles from the sidelines. Ten poles mounting 12 floodlights each at a height of 40 feet provide the desired amount of illumination.

An eight-pole installation with 16 lights on each pole at a height of 60 or 80 feet is shown in Fig. 3 with the poles 30 to 75 feet from the sidelines. Six poles and 144 floodlights at a height of 100 feet comprise the installation in Fig. 4 when the poles are 75 to 130 feet from the sidelines.

On any field having bleachers or grandstands, for best results the lights should always be behind the bleachers.

Fig. 5 shows the detailed layout (Continued on page 21)

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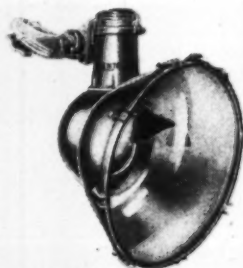
Illumination for the football field of Loyola University in New Orleans, La., is provided by Benjamin "Play-Area" floodlights using 1500 watt lamps



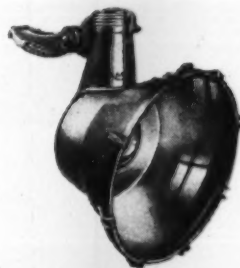
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"ELLIPTO-LITE" for 300-500, 750-1500 watt lamps



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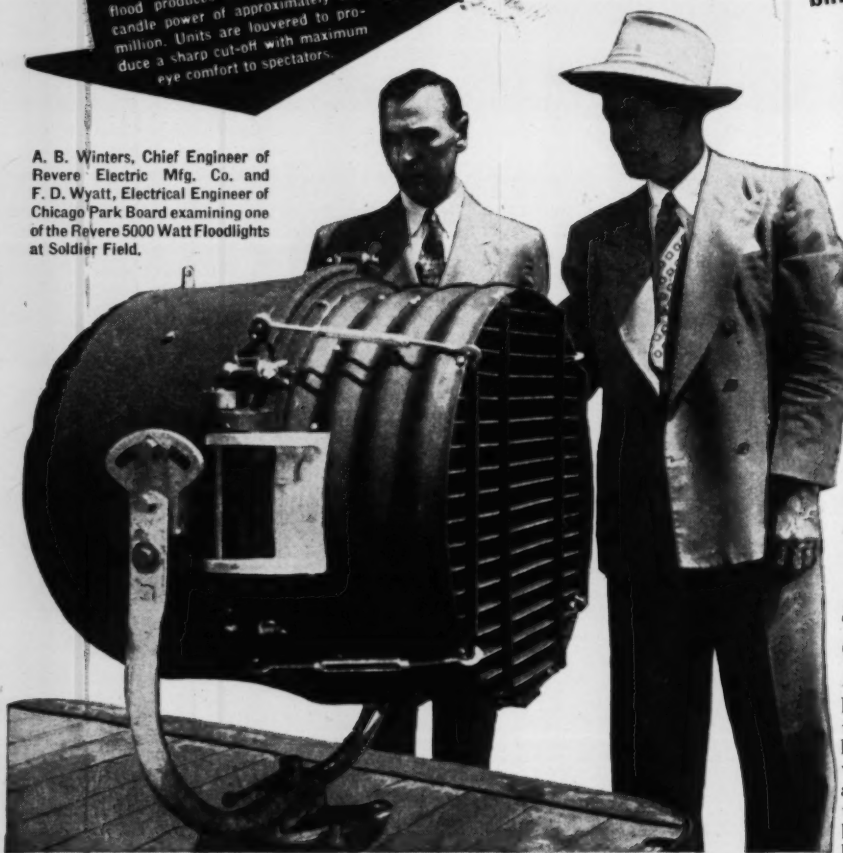
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A. B. Winters, Chief Engineer of Revere Electric Mfg. Co. and F. D. Wyatt, Electrical Engineer of Chicago Park Board examining one of the Revere 5000 Watt Floodlights at Soldier Field.



TO ILLUMINATE this giant stadium efficiently and without distorting the architecture with high towers was the immediate aim of all concerned. Revere engineers working with engineers of the Chicago Park Board jointly decided on mounting the floods on the colonnades on either side of the stadium. The problem of glare was overcome so that all events would be afforded the utmost in visibility and eye comfort.

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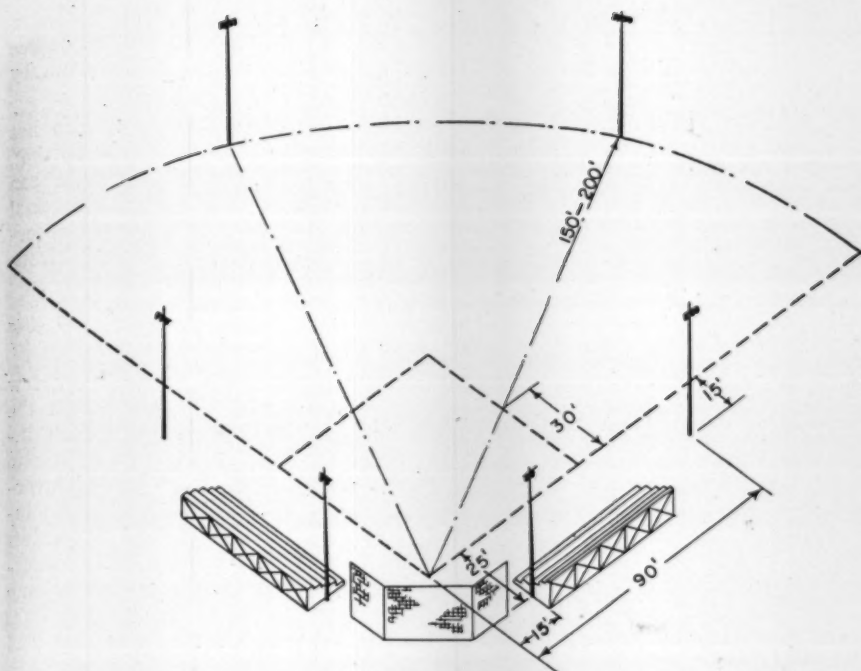


Fig. 5: Typical six-pole Class B softball unit requiring 14 or 18 floods each.

(Continued from page 18)

of a softball field. The illumination is provided by floodlights mounted on six poles. On a field where the outfield boundary is 150-200 feet, the minimum requirement, according to NEMA Recommended Practice is 18 floodlights per pole mounted at a height of 40 feet.

While this lighting is adequate for amateur players, higher intensities are recommended for city and industrial league teams, and still more illumination for semi-pro play.

The most satisfactory and economical illumination for tennis is realized when two courts are lighted at a time. Fig. 6 shows two regulation tennis courts illuminated by eight floodlights mounted on four poles at a height of 30 feet.

Great strides have been made in the science of sports lighting during the past 16 years. For this reason, many schools with floodlighting systems may find them obsolete from both spectators' and players' viewpoints.

In 50 per cent of the cases, those desiring to improve their plants will find it economical to scrap their installation and install a new system. However, in many cases, replacing the floodlights with modern equipment is all that will be required.

Schools which now have lighting installations should study their present systems and determine what is lacking.

In contrast to the early days of sports lighting when any type of floodlight and pole was used, the trend today is toward permanence,

quality and appearance. Recent products which have these characteristics are the neoteric "Yankee Stadium" floodlights and the monotube steel floodlighting poles.

The poles not only add to the appearance of an installation, but also provide easy underground wiring, eliminating the untidy appearance of overhead wires. No guy wires are required with steel poles or towers.

Today's schools, as focal points in communities, have an excellent opportunity to contribute to community living by providing the leadership for model community recreation centers and lighting installations, either as a war memorial or simply as a community-betterment project.

Schools and cities can work side by side in providing more enjoyable

and healthful recreation for both young and old.

This trend toward the illumination of fields and playgrounds has provoked a number of interesting questions concerning costs, installations, operation, etc. The more common posers, together with the answers, follow.

How can a system be kept at top efficiency?

Answer: The following periodic maintenance schedule, if followed carefully, should keep equipment at top efficiency. At the beginning of each season:

(A) Clean all floodlights thoroughly with soap and water; follow with Alzak cleaner if the floodlight is of modern design.

(B) Replace all badly blackened lamps with lamps of the same voltage.

(C) Replace all lamps if 75 percent of expected life has been reached.

(D) Check floodlight mounting bolts for looseness.

(E) Check all wiring connections.

(F) Check poles, cross arms, and distribution panels and boxes for corrosion. Paint where needed.

(G) Check all safety features such as pole steps and safety platforms.

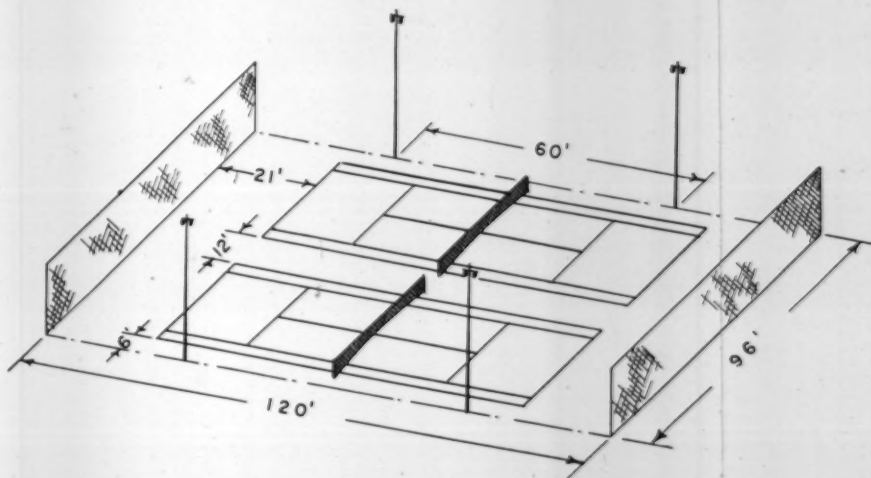
Can the installation be made by an electrician, or must a sports lighting expert be called in?

Answer: Practical sports lighting experience has resulted in standardized layouts. These are available from all recognized manufacturers of sports lighting equipment. They may be readily followed by your contractor.

What are the most important considerations in sports lighting?

(Concluded on page 22)

Fig. 6: A four-pole tennis installation which lights two courts at a time.



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(Continued from page 21)

Answer: Visibility is the primary factor. This in turn depends upon (1) an adequate level of lighting, (2) proper choice of floodlighting equipment, (3) adequate mounting height, and (4) proper location of the poles and floodlights.

How do overhead and underground wiring compare in cost?

Answer: By taking advantage of all the benefits and convenience afforded by underground wiring and by complete assembly of floodlights on steel poles, together with all branch circuit wiring, before being raised into position, almost all the additional cost of underground wiring can be saved.

What flexibility should be contemplated in the electrical control of a lighting system?

Answer: Either primary or secondary control of all poles of a system, other than a system depending upon all poles for successful operation (such as tennis courts), should be provided. This makes it possible to light half a football field for practice purposes only, or for playing softball on that portion of the field.

What is the most efficient manner of adjusting the floodlight beams on the field?

Answer: Aiming charts are available from the floodlight manufac-

turer. Modern sports floodlights have horizontal and vertical degree marking scales for ease and accuracy of adjustment.

This type of floodlight also has vertical repositioning stops so that, after servicing, the floodlight can always be returned to its original setting. (It is seldom if ever necessary to disturb the original horizontal setting in servicing.)

At what voltage should the system be operated?

Answer: The comparatively few hours per year during which the average sports and recreation installation is used have given rise to the economical practice of over-voltage operation of lamps. An installation operated 200 hours or less per year should have lamps operated at 10 percent over rated lamp voltage. This increases the light output 35 percent and the power 16 percent.

In this way, the number of floodlights and related equipment required can be reduced by 25 percent, compared with rated voltage operation. Where recreational installations are used 200 to 500 hours a year, five percent over-voltage is advocated. Above 500 hours, rated voltage operation should be used.

The table below offers a quick check on lighting recommendations for popular recreation activities.

**SPORTS and RECREATION
LIGHTING RECOMMENDATIONS**

Sport	Poles	Mtg. Ht. Feet	FLOODLIGHTS		Estimated Cost
			No.	Watts	
Badminton Court	2	25	4	500	\$300-400 per court
Baseball (120 floodlights)	8	80	120	1500	\$15,000
Basketball	4	30	8	1500	\$750-\$1000 per court
Bowling Green	8	30	12	1000	\$1000-1200
Football					
Class A	6-8-10	40-60-80-100	120-144	1500	\$12,000-13,000
Class B	6-8-10	40-60-80-100	80-108	1500	8000-10,000
Class C	6-8-10	40-60-80-100	60-84	1500	6000-8000
Handball (2 courts)	2	30	2	1500	\$300-400
Hockey Rink	8	40	16	1000	
			4	1500	\$3000-3500
Horseshoes					
1-3 courts	2	20	2	500	\$200-300
4-8 courts	4	20	4	1000	400-450
Shuffleboard					
1-3 courts					
4-8 courts					
Same as Horseshoes Courts					
Softball					
Class A	8	40-60	24-48	1500	\$5000-6000
Class B	6	40-60	14-30	1500	3000-4000
Class C	6	40	12-14	1500	2300-2800
Swimming Pool					
Underwater			16	1000	\$3000-4000
Overhead	6	30	8	1000	800-1200
Tennis (2 courts)	4	30	8	1500	\$1000-1200



Features for Scholastic Appreciation

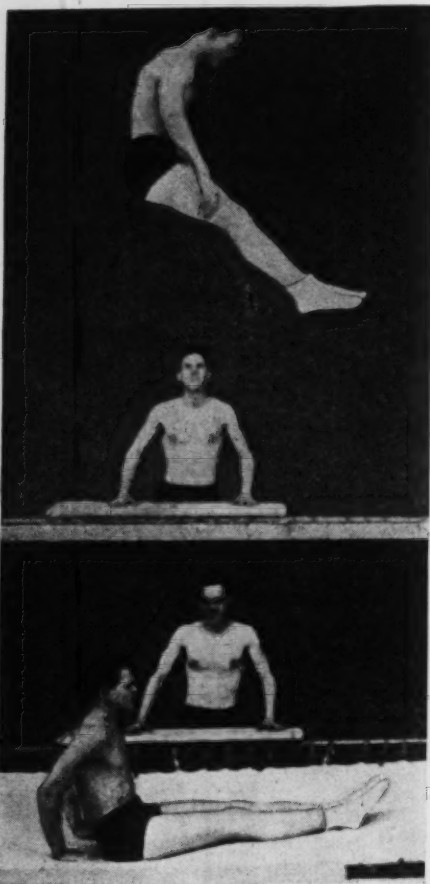
- 1. Yellow-back Kangaroo with reinforced leather linings.
- 2. Outside counter pockets and shin bone leather counters.
- 3. Form fitting tongues and telescopic clinched eyelets.
- 4. Genuine bend innersoles, sole and heel taps.
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TRAMPOLINE STUNTS

by NEWTON C. LOKEN



Seat Drop

TRAMPOLINING is fast becoming a popular physical education activity in the nation's schools. Many people think this apparatus is a recent invention. Actually it goes back to the early European circuses. Some authorities contend that its inventor was du Trampoline, a French flying trapeze artist of the middle ages.¹

The trampoline as a gymnasium apparatus received its major impetus through the efforts of George Nissen. After several years of research and development, he patented the "Nissen Trampoline" in 1939.

During World War II, the Navy and Army used the trampoline extensively. They realized some of the outstanding values of trampolining such as; (1) balance and control of the body in the air, (2) development of oneness with the plane (for the flyers), (3) timing and rhythm in coordinated motions, (4) confidence in the air, and (5) physical conditioning.²

¹Griswold, Larry, *Trampoline Tumbling*, 1943, pp. 2-3.

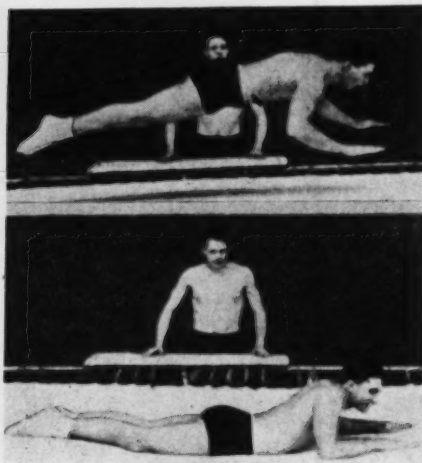
²Price, H. D. and Loken, N. C., "Trampolining in Naval Aviation," *Scholastic Coach*, February 1943, p. 12.

The Medart Equipment Company is now manufacturing a similar piece of apparatus with the trade name of Acrômat Trampolin.

If the present popularity of this activity continues, it seems likely that within the next five years a majority of the high schools, YMCAs and colleges will sponsor trampolining.

The trampoline has more appeal than any other gym piece because it involves rhythm and balance rather than brute strength. The stunts and routines call for originality and ingenuity.

The trampoline may also be used for fancy diving. It helps a great deal in learning tucks, spins, twists, etc. It also eliminates the plunge into the water while the diver is practicing the fundamental body movements.



Front Drop

Many well-known divers as Sam Howard, James Rae, Earl Clark and Suzanne Larson have used the trampoline in perfecting their diving routines.

The trampoline may also be used by tumblers. Some coaches feel that trampolining and tumbling do not mix well. However, my experience has proved that the trampoline helps the tumbler immeasurably.

On the trampoline the tumbler may execute a particular trick, i.e. a back somersault, numerous times. Each time the performer does a back somersault he "feels" the movements of the stunt a little better.

Through repetition of such a stunt the tumbler soon learns it—thus, in keeping with the old proverb of "practice makes perfect," the result is a perfect or near perfect execution of the stunt.

The all-around national collegiate gymnastic champion of 1942, Newton C. Loken, is now assistant supervisor of physical education at the University of Michigan.

After a performer has successfully executed the stunt several times, he can experiment with more lift with the arms, a tighter tuck, a faster throw back of the head, etc. On the mats this is difficult to do because the tumbler doesn't receive the benefit of the lift from the trampoline.

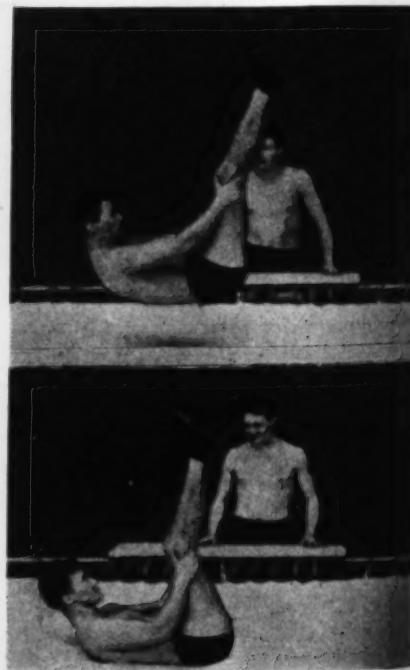
Another factor favoring the trampoline is that of fatigue. On the mats a tumbler is able to perform just a few standing back somersaults or running front somersaults, whereas on the trampoline he may do an indefinite number with just a few seconds rest between attempts.

In this way the tumbler learns the feel of the somersault faster than on the mat because he can do more in any one practice period.

Some coaches claim that the spring received from the trampoline "kills" the tumblers spring on the mat. There is, of course, a need to adjust, chiefly from a mental angle, from trampolining to tumbling, but once that adjustment is made the change over from trampolining to tumbling is made automatically.

The tumblers here at Michigan unanimously agree that there is an adjustment period, but that once this is accomplished trampolining definitely aids their tumbling.

(Continued on page 26)



Back Drop

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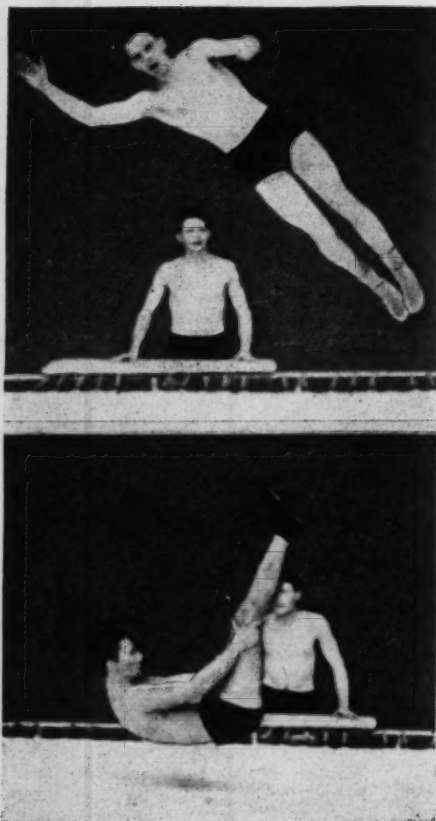
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Front Swan Half-Twist to Back Drop

(Continued from page 24)

Before discussing the stunts, it is important to fully understand the technique of the basic activity, which is simple bouncing.

Bouncing on the canvas of the trampoline is similar to bouncing on a springboard or diving board. The feet must be kept about a foot and a half apart while on the canvas, but must come together while in the air. The knees must be bent slightly when contacting the canvas, and the legs must be straightened while in the air.

One must lift with the arms on the upward bounce of the body and drop the arms when coming down in preparation for the next upward bounce. The body must be kept straight, head up, eyes forward.

There should always be at least two spotters, one at each end of the trampoline. If more are available, place them around the trampoline at regular intervals.

The following are some descriptions of elementary stunts in a suggested teaching progression:³

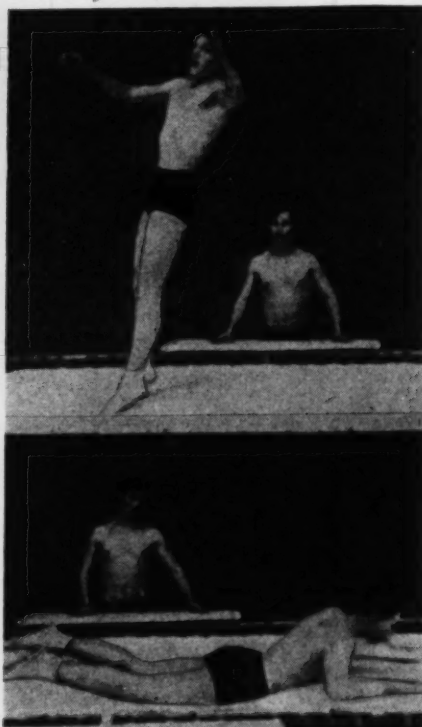
Seat Drop: Land on the canvas in a sitting position with the legs fully extended forward so that the entire backs of the legs contact the canvas simultaneously. The trunk is slightly inclined backward from the vertical. Hands flat on the canvas

six to eight inches in back of the hips, fingers pointed toward the feet with the arms slightly bent.

Front Drop: Land on the canvas in prone position without arching the back. Extend the arms forward with the elbows extended sideward and palms of the hands downward. The following contact points should land simultaneously: palms, forearms, chest, abdomen, and thighs.

Try this stunt from a hands and knees position the first few attempts.

Back Drop: Land on the canvas in supine position with the legs straight and vertically inclined. Place the hands either on the front of the legs just above the knees or



Back Swan Half Twist to Front Drop

free of the legs, semi-extended forward-upward. Keep the chin on the chest throughout the trick.

Try this stunt first from a seat drop to a back drop then to the feet.

Front Swan Half Twist to Back Drop: Begin as if going into a front drop. When maximum height is reached, throw one arm across the chest and turn the head in the same direction, thus twisting the body a half turn. Land in a back drop position.

Try this stunt at first from a very low bounce.

Back Swan Half Twist to Front Drop: Start as if going into a back drop. When maximum height is reached, execute a half twist of the body and land in a front drop position.

Back Drop to Front Drop: From

a back drop position, kick forward with the legs. After this kick, double up the legs into a semi-tucked position as the body rotates forward toward the front drop position. Land in a front drop position with the hands on the canvas and the head up.

Front Drop to Back Drop: From a front drop landing, push hard with the hands, tuck the legs to the chest and land in a back drop position. Keep the chin on the chest throughout the stunt.

Seat Drop Full Twist to Seat Drop: Land in a seat drop position, then push hard with the hands and swing the arms upward and across the body in the direction of the twist, eyes watching the feet. The trunk leans backward and the body straightens toward a horizontal layout position as the head makes its twist. Continue the twist until a complete revolution of the body is completed. Then land in a seat drop position.

At first try this stunt from a sitting position on the canvas. Bounce a couple of times in a sitting position and then go into the full twist.

(Continued on page 28)



Back Drop to Front Drop

³Loken, Newton C., "The Order and Grade of Trampoline Stunts According to Their Difficulty," Unpublished Master's Thesis, University of Michigan, 1946.

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For almost half a century Hillyard's Gym Finish has given and is giving Proper Protection to Gym Floors all over the Nation, in Schools, Colleges, Universities, Public and Private Institutions. The name Hillyard on a product is synonymous with Proper Surface Protection, Longer Life, Lasting Satisfaction and Economical Maintenance. Successful Coaches and Famous Winning Teams agree that Hillyard's Gym Finish is a great surface to play on.

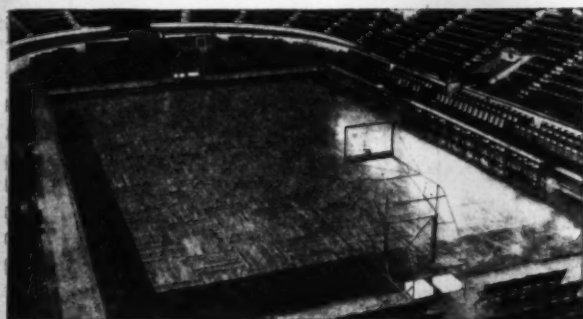
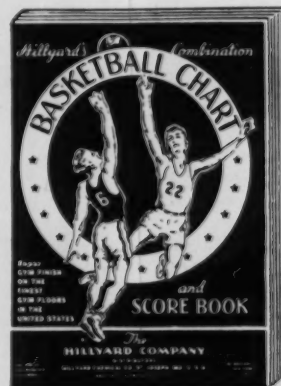


More than ever before this is a day of Specialists and Hillyard Floor Treatment Specialists are at the top of their profession. Call or wire us today for the Hillyard Specialist in your vicinity, his knowledge and training is yours for the asking, he will gladly tell you about proper maintenance for the entire building from basement to the roof top. Call us today, no obligation.

FREE... TO COACHES AND OFFICIALS

This entirely new Basketball Chart and Score Book, in several colors, with new Charts and other valuable information on Basketball.

*Write for your free
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1947 BROADWAY, NEW YORK, N. Y.

Calling All Coaches PLAY BETTER BASKETBALL with the NEW HANK LUISETTI DIAGRAM BOARD



THE DIAGRAM BOARD IS 22" x 25", HAS A NEAT METAL FRAME, AND THE COMPLETE CARRYING WEIGHT IS ONLY 2 1/2 LBS.

Hank Luisetti, America's great all-time, All-America basketball star, diagrams a play on the new board. (The Luisetti Diagram Board is now being used on an NBC television broadcast conducted by Clair Bee, Coach of the Long Island Blackbirds.)

TAKE IT ON TRIPS! USE IT ANY TIME, ANYWHERE!

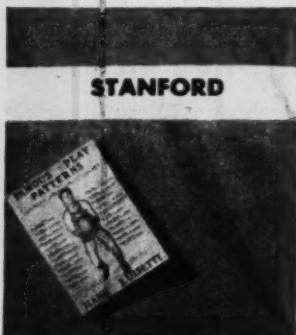
Locker room, on the bus, train, plane, hotel room, or at home! Keep it with you on the bench for play instruction to ingoing substitutes.

Improves basketball chalk talks and instruction 100%, giving a clear complete assignment to the individual and the team.

The board is double-sided for double use (full court on one side, half court on reverse side), permitting the diagramming of every type of offensive and defensive formation.

Also handy carrying case, with your school name and colors displayed. (A sealed-in pocket contains special colored diagram chalk and cloth eraser.)

We also have the larger Hank Luisetti Permanent Basketball Diagram Board (see New Equipment).



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Ward Lambert, Comm'r NPBL
Henry Iba, Oklahoma A. & M.
Clair Bee, Long Island
Nibs Price, California
Everett Dean, Stanford

★ ★ ★ ★ ★ ★ IN ADDITION, WHAT EVERY BASKETBALL COACH NEEDS!

A special copyrighted booklet consolidating famous basketball patterns and plays by the following outstanding coaches of America, with a picture of each coach and a history of his coaching career:

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Adolph Rupp, Kentucky
Ben Carnevale, Navy
"Pops" Harrison, Iowa
"Hee" Edmundson, Washington
Dr. Walter Meanwell,
formerly Wisconsin
Everett Shelton, Wyoming
Ed Krause, Notre Dame
Ray Meyer, De Paul

Harold Foster, Wisconsin
Doug Mills, Illinois
Joe Hutton, Hamline
Howard Hobson, Oregon
Vadal Peterson, Utah
Jack Friel, Washington State
Loren Ellis, Valparaiso
Joe Lapchick, St. John's of
Brooklyn
Howard Cann, New York

AMERICA ATHLETIC ENTERPRISES

635 HOWARD STREET • SAN FRANCISCO, CALIFORNIA

Please send me prepaid the Hank Luisetti Basketball Diagram Board which I have checked below:

Set "A"

☐ 22"x25" double-sided, portable type, complete with carrying case and booklet, "Hank Luisetti's Famous Play Patterns"..... price \$17.50

Set "B"

☐ 24"x36" single-sided (full court only), permanent hanging type, with booklet, "Hank Luisetti's Famous Play Patterns"..... price \$14.75

☐ Both above sets complete..... price \$30.00

☐ Extra single copies of "Hank Luisetti's Famous Play Patterns"..... @ \$1.00 each

Send C. O. D. ☐ Enclosed money order or check ☐ Colors of School.....

Name of School (please print).....

Name (please print).....

Address.....

City or town..... State.....

Support your body with the arm on the side in which you twist. If you twist to the right keep the right arm on the canvas and spin around that arm.

Seat Drop Half Twist to Seat Drop: Land in a seat drop position, then push hard with the hands and reach forward and upward with the arms. Twist the shoulders and hips and swing the legs under the body pendulum fashion. The body and the legs should be straight during this twist. After the half twist is completed, flex the body to land in a seat drop position.

At first try a seat drop into a half-twist to the feet. This gives the performer the "feel" of the body twist. Then try the complete trick. This stunt is often called "Swivel Hips."

One-Half Turntable: From a front drop position, push hard sideways with the hands and tuck the body into a semi-pike position. After this hard push with the hands turn the body around 180 degrees. The body rotates around so that chest, abdomen, and front of legs face the canvas throughout the stunt. After the half turntable is completed, open the tuck and land in a front drop position.

At first try this stunt as follows: from a front drop position push up with the hands and feet and lift the hips high. In this position walk around on the hands and feet so that the body completes a 180-degree turn. When the head is facing in the opposite direction from which it started, lift the hands and feet off the canvas and land in a front drop position.

Front Somersault to a Seat Drop: From a double foot take-off, bend vigorously forward at the waist and drop the chin to the chest as the legs drive downward and the toes press away on the take-off. Throw the arms upwards and then downwards. Complete the three-quarter flip in the air and land in a seat drop position.

At first this stunt should be tried as a forward roll on the canvas. With each successful attempt the performer should bounce and lift a little higher.

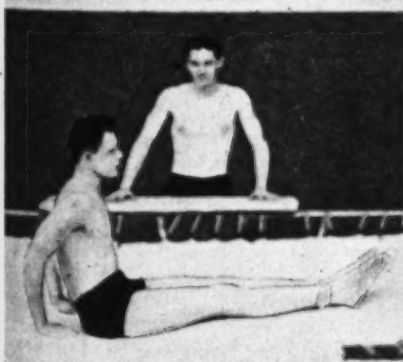
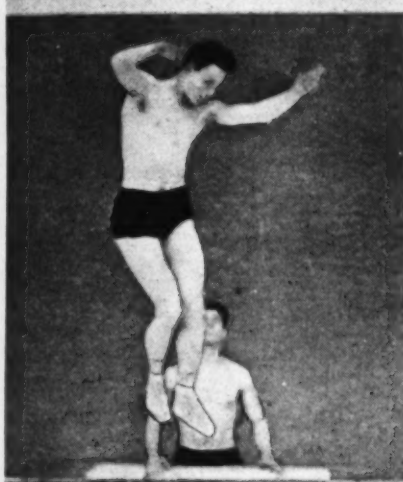
Cradle: From a back drop position, kick forward as if going into a front drop. When the body is past the vertical position, execute a half twist and land in a back drop position. The performer must wait until he is well over towards a front drop position before he executes a one-half twist to a back drop.

Back Pullover to Feet: Land on the base of the spine with the feet off the mat, the hands under the legs with the legs slightly bent, and

the body leaning slightly backwards. From this position bounce backwards and pull hard with the arms at the start of the backward flip. Continue the back pullover to the feet.

At first this stunt should be attempted as a backward roll from a standing position. Then with each try a higher bounce proceeds the seat drop position into the back pull-over. The first few times the performer should have his hands over his shoulders to break the fall in case he doesn't completely finish the stunt.

Back Somersault: Lean slightly backward as the back somersault is
(Continued on page 60)



Seat Drop Half-Twist to Seat Drop



SAV-A-LEG*
Home-Plate

APPROVED AND USED!

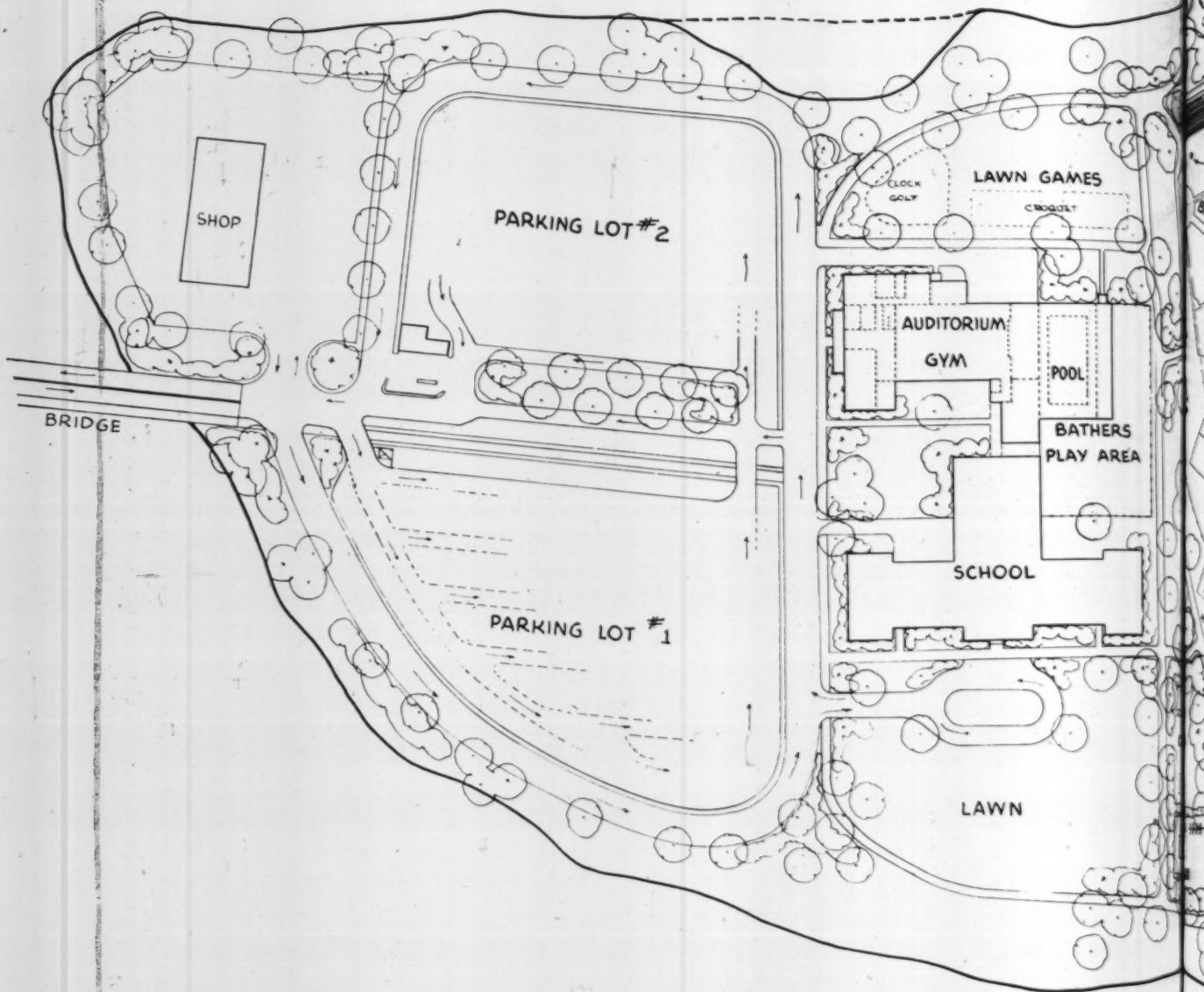
Official with major leagues, semi-pros, colleges and high schools. The only home plate with beveled sides that slant into the ground, assuring a safe, smooth landing! Umpires and players agree that it is an outstanding technical advance . . . "SAV-A-LEG"—the most famous name in home plates.

FINEST QUALITY SINCE 1877

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SR



Midelburg Island • LOGAN, W. VA.

ALTHOUGH located on an island, the Midelburg development represents the best in modern, all-purpose recreational planning and may be referred to with benefit by communities contemplating similar projects:

The Midelburg Island development covers about 30 acres of ground and is designed to serve the recreational needs of the 70,000 people in Logan County. The main units include:

1. A vehicular bridge providing direct access to the Island, designed for pedestrian as well as vehicular use and supplemented by two additional pedestrian bridges at strategic points.

2. A parking field with a capacity of 500 to 600 cars.

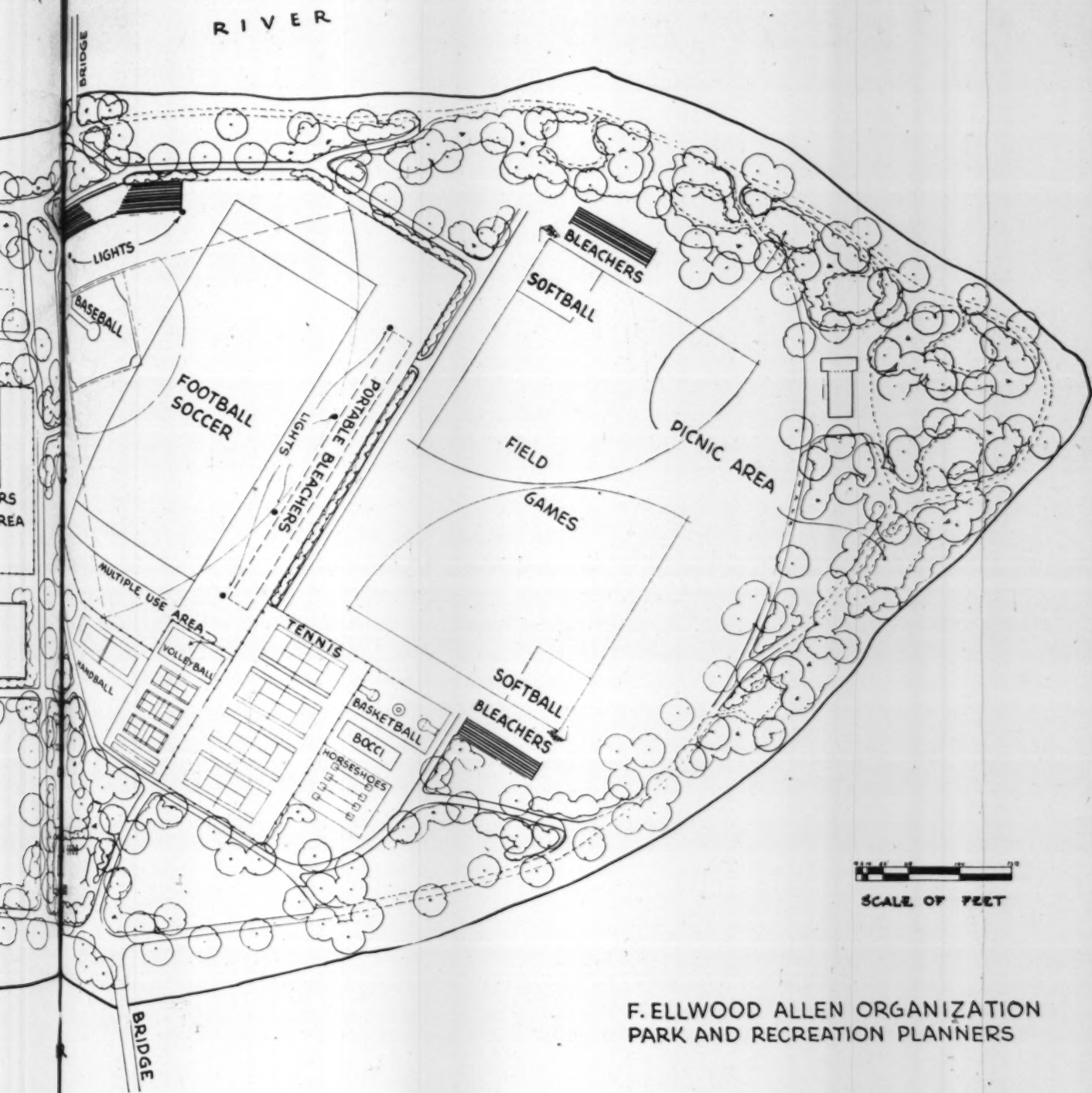
3. A series of recreation facilities for all age groups, including family and group picnicking facilities.

4. A center for indoor recreation providing facilities for a well-rounded program with special consideration to bowling and swimming.

5. A proposed public school designed both architecturally and functionally in coordination with the proposed recreation building, to avoid any duplication of facilities.

6. A maintenance building for the state highway department.

The recreation building includes a combination



F. ELLWOOD ALLEN ORGANIZATION
PARK AND RECREATION PLANNERS

auditorium-gym with a functional stage and a total seating capacity between 500 and 600. The pool (75 by 35 ft.) is located at the rear of the gym, while the locker, shower and dressing room facilities are situated adjacent to both the gym and the pool so that they can serve both.

In the basement are four bowling alleys, a room for crafts and woodworking, a snack bar and other facilities required to operate and maintain the building.

The second floor contains one or more game rooms and two or three club rooms.

The greatest source of revenue in connection with the development is the parking area. If properly op-

erated and maintained, it will produce a large proportion of the revenue required to operate and maintain the entire development.

Since the night-lighted diamond and gridiron is entirely enclosed, it, too, can be used in connection with the production of revenue. Activities such as swimming, bowling, use of the auditorium-gym for special functions (dancing, basketball, dramatic and musical productions) will also bring in considerable income.

Other good sources of revenue are the snack bars in the rec building, the concession at the ball park, and the use of the auditorium-gym as a dining hall.

MacGregor GoldSmith

SPORTS EQUIPMENT



"Scores in Every Field of Sport"





Nationally Known

Nationally Used

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CINCINNATI 14, OHIO, U.S.A.

A Course in Personal Hygiene

OCTOBER	"The Major Topics"
NOVEMBER	"Skin, Hair and Nails"
DECEMBER	"Exercising for Health"
JANUARY	"Eating for Health"
FEBRUARY	"Sleep, Rest, Fatigue"
MARCH	"Communicable Diseases"
APRIL	"Tobacco, Alcohol, Drugs"
MAY	"Hygiene of Special Organs"
JUNE	"Mental Hygiene"

by DR. HENRY F. DONN

DAY after day, hour after hour, over the radio, in the news, and on the billboards, the American public is assailed with an endless stream of advice on eating habits.

The high school boy is but a small part of the general public that can be reached and given unbiased scientific information relative to wholesome eating habits and their contribution to personal health.

A high school boy likes to eat. He likes the food placed before him, especially if it tastes good and is attractively served. When he is on his own, however, he becomes careless in his selection of foods, generally eats only what he likes, usually in great quantity, and pays little, if any, attention to how and when he eats. He must be shown the importance of eating wisely and sanely.

OBJECTIVES

The objectives of this unit are divided into desired habits, attitudes and knowledges. They are specific in nature and form the basis of a pre-unit questionnaire for students, so that the teacher may emphasize those areas for which the questionnaire shows a need.

HABITS

1. Eat meals at regular intervals.
2. Attempt to include the essential food elements in daily diet.
3. Restrict candy eating to after meals.
4. Avoid the drinking of coffee, tea and soda pop.
5. Do not eat meal when unduly tired, or exercise immediately after meal.
6. Masticate food sufficiently for proper mastication.
7. Wash hands and face before eating.
8. Practice the accepted social

This is the fourth of a series of articles on the constituents of a personal hygiene course for high school boys, by Dr. Henry F. Donn, physical education instructor and basketball coach at Weequahic High School, Newark, N. J.

graces at all times while eating.

9. Purchase food only from places that practice sanitary measures in food handling.

10. Wash all raw fruit and vegetables before eating.

11. Consult a physician for treatment of obesity or excessive thinness and cooperate fully.

12. Eat only from clean dishes and use clean tableware.

13. Keep an accurate check on weight and report any large discrepancy to physician.

14. Have a bowel movement at least once a day.

15. Refrain from use of cathartics or physics without advice of physician.

16. Have a urinalysis yearly.

17. Practice habits of cleanliness in daily toilet.

18. Maintain good posture while eating.

19. Be a jovial companion at dinner table.

20. Use the words learned in this unit in daily discussions on matters related to these practices.

ATTITUDES

1. Appreciate eating in clean surroundings.
2. Enjoy good companionship while eating.
3. Appreciate the efforts of others in making food attractive.
4. Take adequate time while eating rather than rush through meals.
5. Accept the responsibility of choosing food wisely when eating away from home.
6. Appreciate the necessity of clean bathroom facilities.

7. Respect the judgment of scientific experts in matters relating to eating and elimination.

8. Appreciate the necessity of eating what body needs first and then what you like.

KNOWLEDGES

1. Have a general understanding of the digestive system and its function.

2. Know the necessity of a balanced diet in personal health.

3. Know accepted behavior at table.

4. Know what to include in daily diet to obtain essential food requirements.

5. Know the danger involved in taking cathartics and physics indiscriminately.

6. Recognize common digestive disturbances and the dangers of self medication.

7. Know that the adequacy of a diet depends on the presence of a considerable number of factors.

8. Know the importance of obtaining a urinalysis at least once a year.

9. Be able to intelligently understand commercial advertisements of food products.

10. Understand the new words presented in this unit.

CONTENT MATERIAL

Limited time prevents a thorough presentation of the body functions involved in the eating process. It is doubtful whether a high school boy has sufficient science background to understand the complicated chemical processes involved.

If the student can get a visualization of the digestive tract and can learn the names of the major parts and their principal function, the objective should be attained. Italicized words should be added to the student's vocabulary list and their meaning memorized.

ANATOMY AND PHYSIOLOGY

Digestion means converting food from the form in which it is eaten into a form which the body can absorb.

1. The digestive process begins when food is taken into the mouth where it is ground by the teeth and mixed with saliva.

2. The pharynx or throat cavity connects the mouth with the esophagus. It controls swallowing. After swallowing, the digestive organs work automatically without conscious control.

3. The esophagus is a straight

Famous Basketball Coaches Tell Their Teams —

"GREATEST CEREAL FOR STAMINA IS OATMEAL!"



Ray Meyer
De Paul University



Laurence M. Harrison
University of Iowa



Clarence Price
University of California



Grace P. Boyce
Hunter College



Adolph Rupp
University of Kentucky

The Quaker Oats Breakfast Makes A Top Training Food For Every Athlete!

● The fast tempo and smashing action maintained by championship teams throughout a game demands plenty of real stamina and energy from every player. For this reason, Ray Meyer, Coach at De Paul University, Clarence Price, Coach at University of California, and other nationally famous basketball coaches agree that the hot Quaker Oats breakfast is actually fine basketball *strategy*! The foods athletes eat should be superior in elements the body uses for strength and vitality. No other natural cereal matches whole-grain oatmeal in these four great nutritional "keys" needed by every athlete, every growing boy and girl who wants to star in sports: Protein for stamina and growth, Vitamin B₁ for vitality and mental alertness, Food-Energy and Food-Iron.

Be sure to suggest the hot Quaker Oats breakfast to every member of your team. Coach Lawrence M. Harrison says, "Quaker Oats is the cereal which I recommend for young athletes, who want foods that will help them be stars." Its delicious flavor makes it a winner with everyone—more people eat Quaker Oats than any other cereal!

Quaker Oats and Mother's Oats
Are the Same

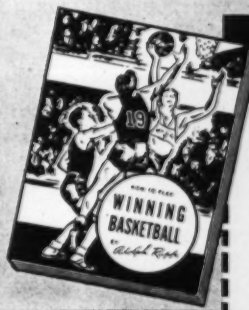


Quaker Oats

The World's Best-Tasting Breakfast Food

FREE! SEND FOR NEW 1947 REVISED EDITION
"HOW TO PLAY WINNING BASKETBALL"
by Adolph Rupp, Coach, University of Kentucky

Inside facts on winning basketball plays, diagrammed drills, defenses and offenses! Sound training program by Dr. H. C. Carlson, basketball coach, University of Pittsburgh; special section on girls' basketball by Grace P. Boyce, Hunter College coach. FREE copy for every member of your team! Send now!



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THE QUAKER OATS COMPANY
Box 1083, Chicago, Ill.

Please send me.....FREE copies of "How To Play Winning Basketball."

Name.....

School.....Squad Size.....

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... FOR every sport

... especially for fast action sports like basketball where feet take a terrific beating, recommend Wigwam Socks for lasting comfort and protection.

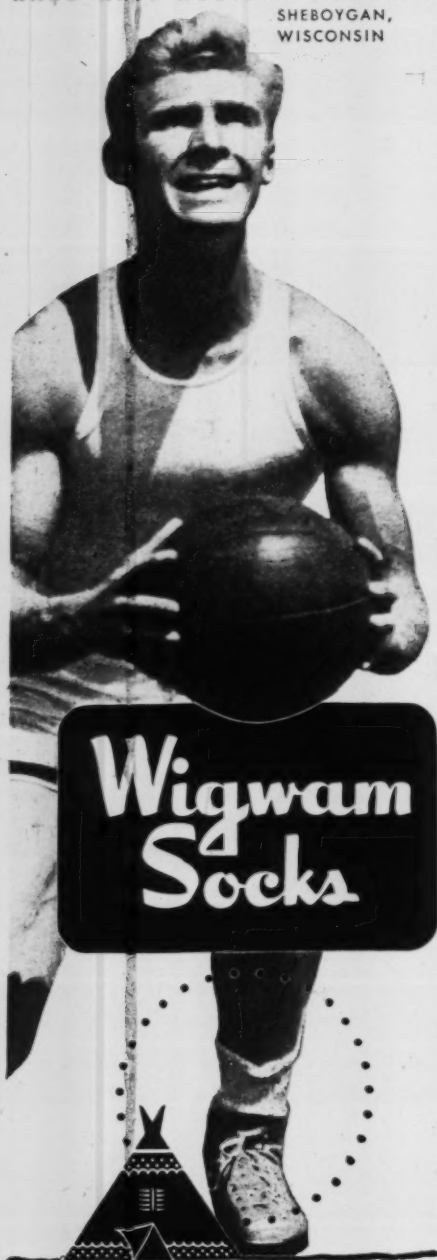
They pay off in quick starts, sudden stops and split-second pivoting.

All wool cushioning, reinforced heels and toes, snug ribbed ankles.

Yes, choose socks carefully . . .
insist on WIGWAMS!

HAND KNIT HOSIERY COMPANY

SHEBOYGAN,
WISCONSIN



tube that leads directly to the stomach. It pushes the chewed food to the stomach by *peristaltic* action, (muscular action).

4. The *stomach* is a pear-shaped sack. In it, food is mixed with gastric juice and churned by muscular action until it is the proper consistency to enter the small intestines. The average meal stays in the stomach about four hours during which most *proteins* or nitrogenous foods are digested. The process is automatic but the brain can affect it. Anger, fear and worry will stop the action; cheerfulness and a happy environment will increase its effectiveness.

5. The *small intestine* is a tube about 23 feet long. It takes about four hours for food to go through the small intestine. *Proteins*, *fats* and *carbohydrates* are acted upon in the small intestine. Digested food is absorbed through the walls of the small intestine into the blood stream for use as needed by the body cells.

6. The *large intestine* is a tube about five feet long and wider than the small intestine. It receives food from the small intestine and holds it from ten to forty-eight hours. Absorption continues and moisture is taken from the remaining food. It gradually grows less fluid and more semi-solid, sometimes becoming too hard for proper elimination through the *rectum*.

7. The *rectum and anus*, located at the end of the large intestine, eliminate undigested food.

8. The organs that function as *excretory* organs and the products that they eliminate are as follows: the *lungs* eliminate carbon dioxide and water; the *kidneys* eliminate (urine) water and soluble salts; the *rectum* eliminates (defecation) solids, bile, water, carbon dioxide and salts; and the *skin* eliminates (sweat) water, carbon dioxide and salts.

FOOD ELEMENTS

Food is any substance taken into the body to build tissue, yield energy and regulate the body processes.

After birth, the material for the growth of our body is derived from food; also the material to make good the loss resulting from the wear and tear of body tissue.

All body activity requires energy; this and all the heat lost from the body must be supplied by food.

Food material over and above what is needed for this purpose, is stored in the body either in the form of fat, or as glycogen in the liver and muscles.

In addition, food contains essential substances called vitamins and mineral salts which regulate nutrition and growth. The essential food elements and their use are listed.

1. *Water*, a compound of hydrogen and oxygen, is present in the composition of all tissues. It supplies fluid for body secretions, chemical actions, transfer of food materials and the elimination of wastes.

2. *Carbohydrate*, a compound of carbon, oxygen and hydrogen, is found in the fibrous parts of plants, starches and sugars. Carbohydrates help to maintain body temperature (values determined by *Calories*), furnish the main source of energy (glycogen) for muscular work and the nutritive process. Excess is stored as fatty tissue. The chief food sources are cereals, fruits, vegetables, honey and concentrated sugars.

3. *Fat*, a compound of carbon, oxygen and hydrogen is found in cream, butter, nuts, oils and the fats of meat. Fat serves as fuel, yields heat and other forms of energy. When excessive, it is stored in the tissues to be used as needed by the body.

4. *Protein*, a compound composed of carbon, oxygen, hydrogen and nitrogen, is found chiefly in meats, fish, legumes and eggs. It builds new tissue, repairs tissue and to a less extent serves as fuel to yield energy in the form of heat and muscular power.

5. *Vitamins* are organic food substances of which only very small quantities are necessary daily for growth and maintenance of the normal body functions. Our knowledge of them is confined chiefly to the effects caused by their lack in the diet of laboratory animals principally rats, dogs and pigeons.

6. *Mineral Salts* are formed from the elements calcium, chlorine, cobalt, copper, iodine, iron, magnesium, manganese, phosphorus, potassium, sodium, sulfur and zinc. These salts are found in the tissues of all living things. They are an essential ingredient of nearly all food substances. A diet that does not contain vegetables and fruit is quite certain to lack some of these salts; calcium and iron especially. The function of minerals in the body have been studied experimentally by varying the diet of laboratory animals.

Note: Have a student make a class report on the known Vitamins and their use. This report should include the vitamins A, B-1, B-2, B-3, B-4, B-6, C, D, E, F, G (B-2), K, Nicotinic Acid, and Choline. An-

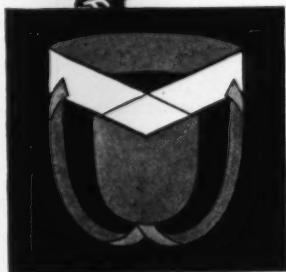
(Continued on page 51)

TRY IT IN ACTION!

Put on a new Trump Supporter with the V-FRONT* construction. Place the waistband low on the abdomen. Pencil-mark its position and then do a few bends and twists. The V-FRONT will move less than 1/4 inch compared to a 2 to 3 inch slippage with any straight-front supporter. Observe, too, there is no extra pouch cloth working back to chafe. You'll agree there are some real improvements here!



This **"V"**
helps them keep
their minds
on the game



On the court, they've no time to spend worrying about slipping, sagging supporters. You'll find the new Johnson & Johnson V-FRONT Supporters offer your teams comfort, protection, freedom from embarrassing adjustments.

Note how the V-FRONT provides *lifting* action, keeps the pouch in place. The all-elastic waistband follows body

contours, fits constantly, *stays put*. V-FRONT construction spells c-o-m-f-o-r-t for every boy on every team you coach! Trump and Rugby V-FRONT Supporters are sold at drug or sporting goods stores. Write to Johnson & Johnson, New Brunswick, New Jersey, for booklet.

* (For sprained or weak ankles, wrists or other athletic injuries, try ADAPTIC - the Johnson & Johnson elastic bandage.)

*Patent Pending

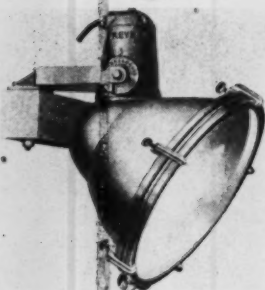
Johnson & Johnson

ALL-ELASTIC

V-FRONT SUPPORTERS

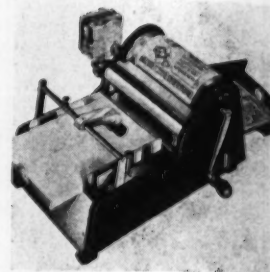
NEW EQUIPMENT

As a service to its readers, *Scholastic Coach* offers this periodic round-up of new sports equipment items. For further information write to: Scholastic Coach, New Equipment Dept., 220 E. 42 St., New York 17, N. Y.



Weatherproof Floodlight. The new 750 to 1500-watt Champion flood recently placed on the market by the Revere Electric Mfg. Co. is of all-aluminum construction, light in weight and dust-tight. A rotation feature simplifies cleaning and relamping, eliminating the danger involved when mounted on high towers.

Liquid Duplicator. A new fast method of duplicating play diagrams and statistics is offered by the Copy-rite Liquid Duplicator, a Walber Duplicator & Supply Co. product. Handles all sizes from post card to 9 x 14 in. May also be used for maps, examinations, reports and all types of form work.



Thumbless Boxing Glove. This MacGregor-Goldsmith product fills a long-felt need for a glove that will prevent thumb dislocations and "eye gouging." An internal cone-shaped palm grip places the knuckles on a level line, thereby absorbing the blow through the hand and reducing injuries. Foamed leather is provided for the heel of the hand.



Ball Hawk Fielder's Glove. Of revolutionary design, this large-sized, three-fingered creation of the Wilson Sporting Goods Co. is made of the finest quality cowhide and really snares 'em and holds 'em.

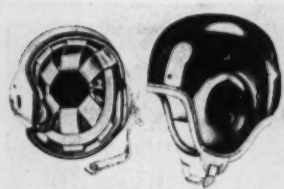


Football Timer. This rugged seven-jewel Harman product of stainless chrome has a small hour dial which clocks off quarters of game, and a sliding lock just to right of winding stem which controls operation of large sweep-second hand. May also be used as stop-watch for other sports.

Floor Polish. Huntington Labs.' Safe-T-San Floor polish is a genuine non-slip self-shining polish that contains no wax whatsoever. One or two thin coats is all that's required on any type surface, the slipperier the better. Dries bright in about 20 minutes.



Plastic Helmet. MacGregor-Goldsmith, Inc., has developed this one-piece, seamless molded helmet for schools and colleges alike. Does not become brittle in extreme cold or soft in extreme heat. Being moisture-proof it will not absorb moisture and become "heavy" in rainy weather. Considerably lighter than conventional type helmet, it is more comfortable to wear and less tiring.

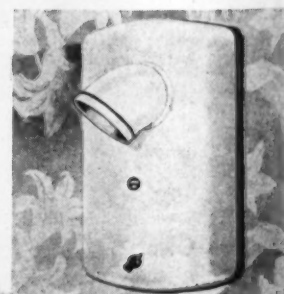


Participation Certificate Plaque. An excellent stimulant for intramural programs, this unique plaque, devised by Award Incentives, Inc., is made of plywood with a laminated plastic facing. Has room for photo of award winner, name, school, season, activity, and signature of principal and director of athletics.



Rubber-Covered Football. Of official design and shape, the Pennsylvania Rubber Co. ball will not absorb water or moisture, hence retains its perfect weight and shape. A pronounced pebble-grain finish facilitates better control in punting, passing, and receiving. Rubber and fabric construction gives it superior durability over conventional model.

Hair Dryer. Designed for hard, continuous service in schools and pools, the Electric-Aire Engineering Corp.'s heavy-duty hair dryer dries hair thoroughly in 3 to 5 minutes. Equipped with choice of three types of switch control. Can be either recessed into wall or surfaced mounted. Quiet, safe, fully guaranteed.



(Continued on page 40)

GET SET FOR A CHAMPION BASEBALL SEASON

Hand These Books to Your Squad

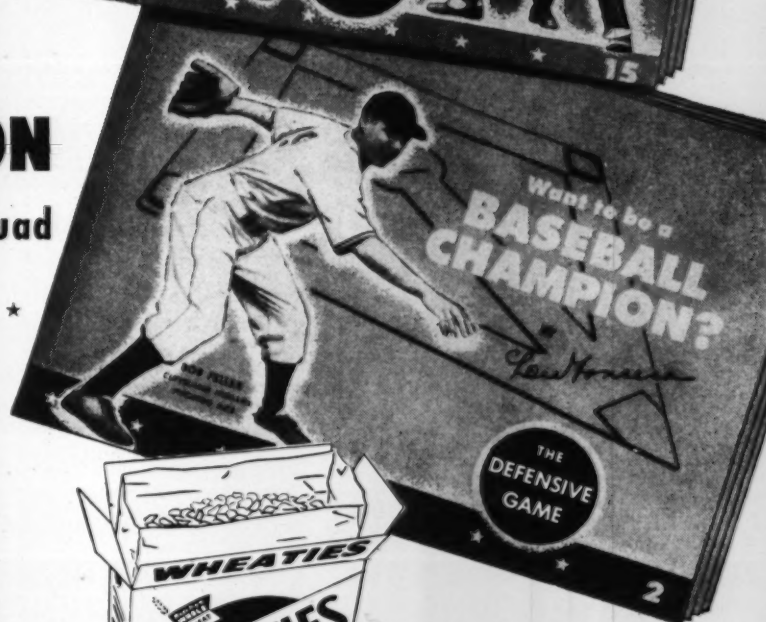
Give your team a "Big-League Brush-Up" in fundamental baseball—by two of the greatest teachers in the game.

Twenty-five years of big league experience in "The Defensive Game" by Lew Fonseca—better known as "Professor of Baseball." Easy-to-get, ready-to-use tips on "The Offensive Game" by Ethan Allen, Head Baseball Coach, Yale University.

Thirty-four famous major league stars (like Feller, Greenberg, Keller, Ott) pose for the many action photos that show exactly how to pitch, catch, hit, run, and field. All these authentic pointers and pictures packed into two 32-page manuals. Here are the basic principles you stress in daily practice sessions—now in permanent reference form. Real coaching help—presented in pointed, personal, *big-league* style. Plus important training and conditioning tips to help keep your team in top shape.

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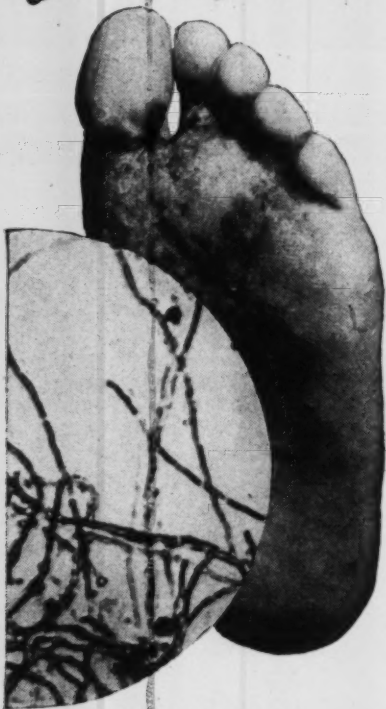
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Athlete's Foot Fungi
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Kills Them



Here, magnified 480 diameters, is a typical species of the fungus that causes Athlete's Foot. There are many other varieties of these fungi, and to destroy them all and help control their spread you have one dependable means:

Alta-Co Powder

This tested, patented formula dissolved in foot baths, 1 lb. to 1 gal. of water, kills them in 60 seconds or less. Also available: Alta-Co Foot Powder which is applied by dusting, to help avert re-infection and where self-medication is indicated. Write for our 36-page booklet and see your Dolge Service Man.



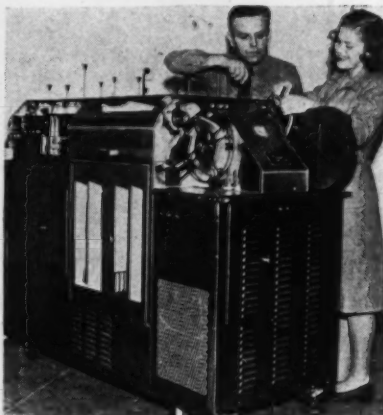
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NEW EQUIPMENT

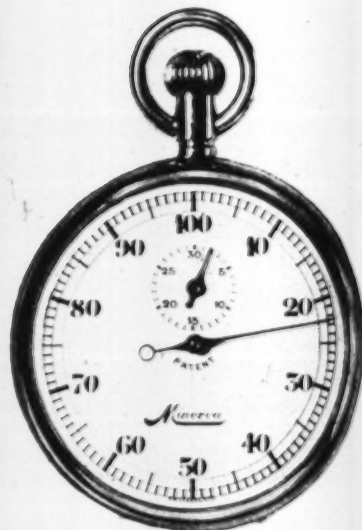
(Continued from page 38)

Basketball Diagram Board. Developed by Hank Luisetti, the greatest basketball player of the generation, the Board is 24 x 36 in. with full court reproduced to scale, weighs 5 lbs., and has a good metal frame with eyelets for hanging. It also possesses a chalk trough, special diagram chalk and an eraser.



Movie Processing Machine. This portable robot-type motion picture machine, produced by the Houston Corp., automatically processes and dries film at a speed of about 25 ft. a minute! Enables you to show your players' mistakes on the screen 10 or 15 minutes after they are committed. Can be operated in broad daylight without fear of film impairment.

Minerva Timer. Ideal for dashes and other purposes where great accuracy is desired, the Ducommun timer represents the ne plus ultra in accuracy. Large hand makes one complete revolution each second, enabling timing to one hundredth of a second. Small hand runs up to 30 seconds. Both hands return to zero upon resetting.



Basketball Shoe. Designed by Sam Barry, the Brooks' shoe features: kangaroo leather upper, cushion heel and arch support, moulded form-fitting tongue, and diamond-point live rubber sole securely vulcanized and reinforced with black leather strip around the edge. An ideal shoe for a great variety of sports, it can be resoled.

Athlete's Foot Preventive. Vestal Inc.'s new product, Staphene, is an effective aid in preventing the transmission of athlete's foot. Diluted at the rate of 2½ oz. per gallon of water, the solution is put in foot baths. It leaves no odor, it is non-corrosive, non-caustic, easy to use and economical. Also effective as a disinfectant, deodorant, germicide and cleanser.

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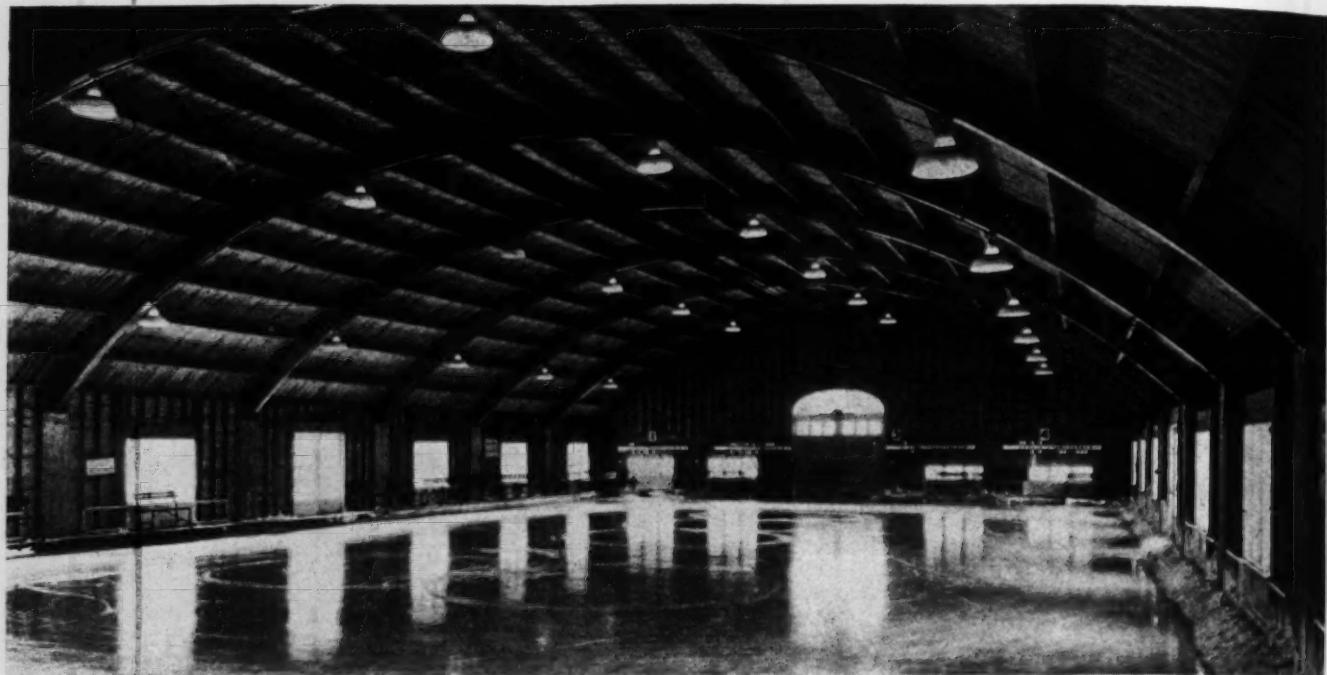
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Courtesy Unit Structures, Inc.

The Laminated-Arched Gym

by M. C. HANISCH, JR.

THE glued laminated arch was introduced in this country in 1934. But it wasn't until World War II that it made its first giant strides.

Our Army and Navy architects recognized its possibilities as a quick, safe, strong and economical type of construction, and incorporated it in the design of aircraft plants, hangars, auditoriums, gymnasiums, recreation buildings, and training centers.

What exactly is a glued laminated arch? This particular type of arch is made by forcibly gluing layers of wood (of predetermined moisture content) by means of high pressure. The layers are compacted into solid units by structural glues of high water resistance. No mechanical fasteners are used in the binding.

Pound for pound, the laminated arch possesses greater strength than steel. It also resists fire better. Bare steel work is quickly distorted by heat. Under tension, complete failure may occur under heat conditions as low as 1200 F.

Laminated wood, on the other hand, is not so readily affected. It will fail only slowly after a solid cross-section has been materially reduced by exposure to fire.

Besides offering superior protection against fire, the glued laminated arch accelerates building

construction and is economical, permanent, safe and acoustically correct.

Since the exposed laminated surfaces are of wood, they can be painted or stained to harmonize with other interior finishes or can be accented with moulding, finished in natural effect or in any one of a number of techniques.

The very simplicity of the arches aids the decorative affect by providing freedom from cobweb trusses which interfere with ceiling height, decorative treatment and lighting and ventilation.

BENT INTO ANY SHAPE

The laminated arch can be bent or shaped to almost any form desired. The architect, when planning the building, can thus shape the arch according to the purpose it is intended to serve.

For example, a gym will require considerable ceiling height at the center of the floor for basketball. But this height isn't essential near the sides. The laminated arch can furnish the necessary center height and yet reduce the wall height near the sides.

With conventional types of construction, this is impossible. The clearance height at the center must

be maintained across the entire width of the building, making high side-walls necessary and expanding the cubical area which must be heated and ventilated.

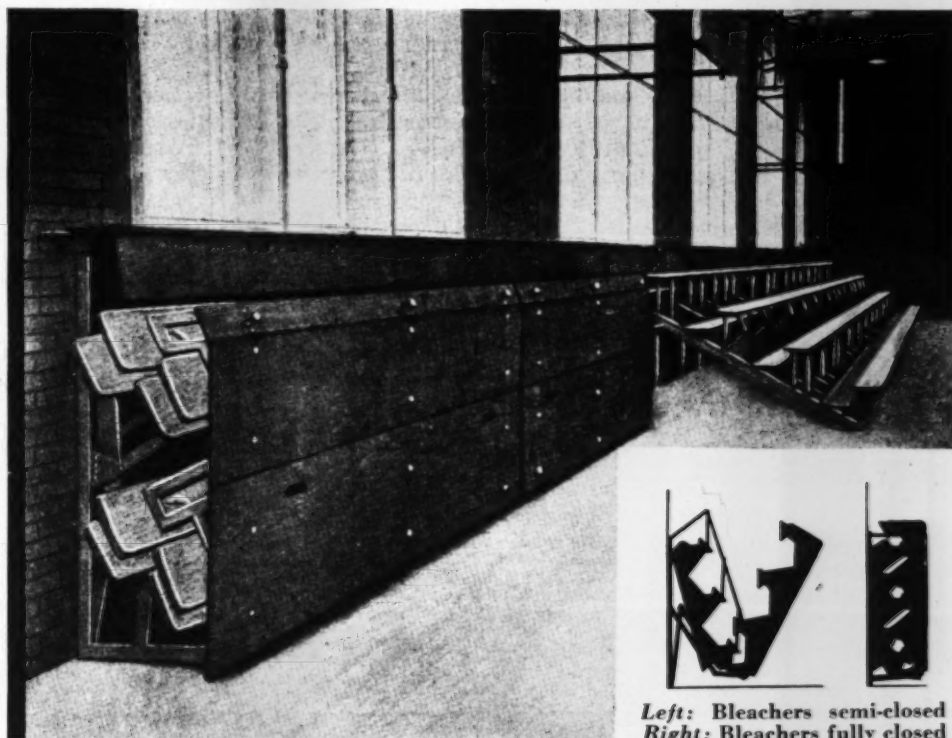
Most building codes specify that walls above a certain height must be increased in thickness. The use of glued laminated arches allows a thinner side-wall because of the reduction in wall height. The acoustical properties of such a building are superior to constructions using the conventional type truss.

The finished cost of laminated arches is less than that of finished steel installations. The former are shipped completely finished, sanded, stained and varnished to match the interior of the building. Steel, to provide the same finish, must be furred and paneled, which is an expensive proposition.

The laminated arch is also less difficult to erect. A span comes in two halves with a plate and bolt connection at the top and a simple shoe connection at the base. Because of the rectangular section, there is less danger of damaging twisting stresses during erection.

Steel sections usually do not have much lateral stability and, during erection, extreme care must be taken to lift the truss so that no undue strain is placed on the structure.

The Williams Cantilever FOLDING INDOOR GRANDSTAND



Left: Bleachers semi-closed
Right: Bleachers fully closed

The Cantilever is a custom-built grandstand that possesses many exclusive and important features. In its design and construction no attempt is made to compete with low-priced indoor stands. On the other hand, we have developed an indoor grandstand that is on a par with the finest type of school construction.

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1. Perfectly counter-balanced, so that it opens and folds with a minimum of energy.
2. No mechanical devices such as springs, pulleys, gears, cables, worm screw drives, etc.
3. Can be installed in any type of gymnasium without alteration to structure.
4. Has attached guard rails at open ends.
5. Stand automatically comes to rigid position and locks. Safety is assured by this locking device which fastens main load bearing supports in place.
6. Perfect visibility for all seated spectators.
7. Floor space underneath easily cleaned.
8. Guard rail at top prevents basketball falling back of stand.

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DESIGNERS AND
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Blueprinting a War Memorial

by F. ELLWOOD ALLEN

THE citizens of Fort Wayne, Indiana, are looking forward to the construction of one of the finest living war memorials in the land. Now in the project stage, it consists of three main units—a sports arena, a large swimming pool and an auditorium.

These facilities, located on an 120-acre tract, meet fully the inadequacy of the community's present indoor recreation facilities and the unprecedented spectator demand for major sports events.

The organization and research that went into this project may serve as a model to every community contemplating a war memorial.

Here are the original recommendations of the chief planner, as submitted to the Allen County War Memorial Commission:

Function of the project: Since organized basketball is the principal indoor sport of Allen County, the capacity of the building must be determined by the demand for this activity.

The economic considerations require planning for the normal rather than the maximum spectator capacity. Certain events may attract as many as 20,000 spectators. Other events may draw only 3,000 or 4,000 spectators.

It is our estimate that the normal attendance will not exceed 10,000. It is, therefore, recommended that the building be designed for a capacity of 10,000 spectators.

Basketball, however, is not the sole function of this building. Other types of sport events must be given consideration.

It is recommended that in the design, provision be made for extreme flexibility so that ice skating and hockey, boxing and wrestling, exhibition tennis, and similar events can be adequately accommodated.

A building designed exclusively for sports events would only be utilized periodically. To obtain the maximum use of the building it must be adapted for a year-round diversified community program. Accordingly, it is recommended further that the design provide for the following activities:

1. Organized games such as badminton, volleyball, indoor basketball, etc.
2. Swimming and aquatic sports.
3. Bowling.
4. Social activities including

dancing, parties, banquets and dining.

5. Organizational activities such as group meetings, trade exhibits, agricultural exhibits, circuses, etc.

The requirements for many of the popular cultural activities cannot be economically or satisfactorily met in a building of this type. It is recommended, therefore, that in providing for music, drama, pageantry and similar activities, consideration be given to a specially designed and completely separate unit of the project which can be coordinated with the major unit.

However, in view of the present economic and practical considerations and in spite of the difficult seating problem, acoustical and environmental factors, it is recommended that provision be made for a large portable stage within the major unit to be used for these specialized types of cultural activities and events.

Size: The size of the building and its component parts will be deter-

mined by the requirements of the major activities included. This resolves itself into a problem of detailed design. Certain activities required must be given special consideration. It is recommended that the project provide:

1. A minimum of sixteen bowling alleys with commensurate facilities.

2. A swimming pool designed for year-round use with adequate provision for standard aquatic events and spectators.

3. Rooms for clubs, organization meetings and group activities.

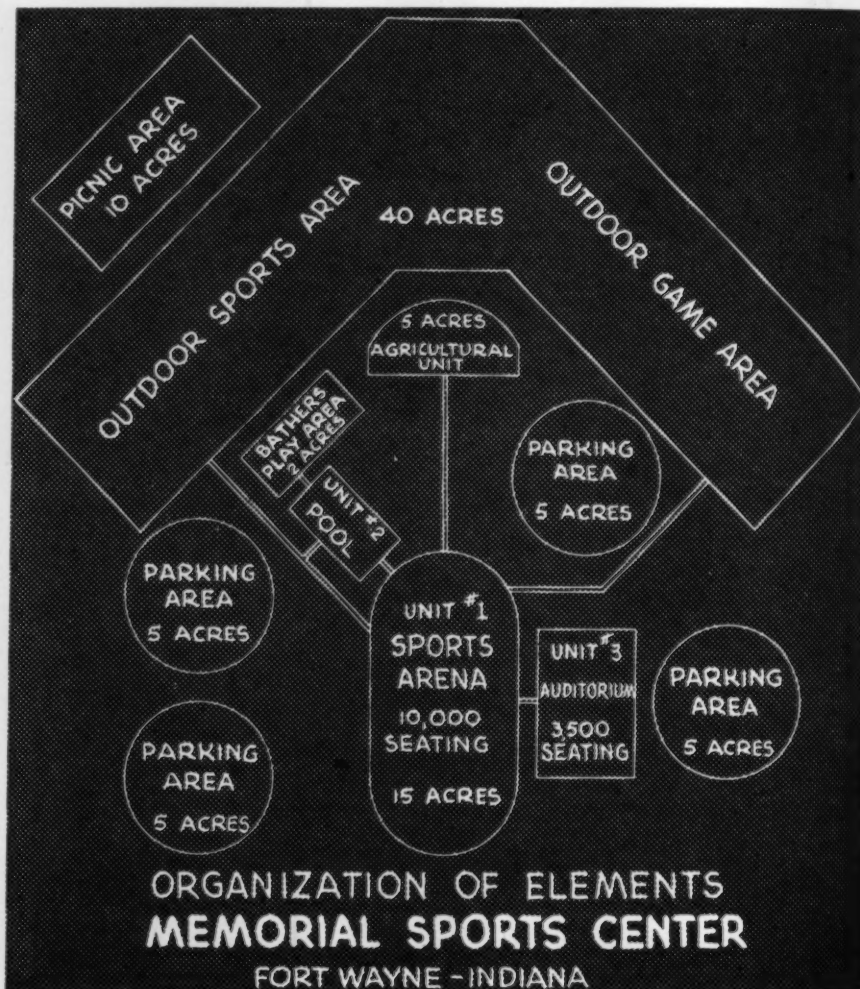
4. A kitchen designed to provide meals for large numbers of people.

5. Adequate locker, shower and dressing room facilities.

6. Rooms for specialized uses such as radio control, demonstration amphitheater, snack bars, etc.

Parking: A development of this magnitude would require parking facilities for a minimum of 2,500 cars. It is recommended that sufficient space be allowed for a series

(Continued on page 46)

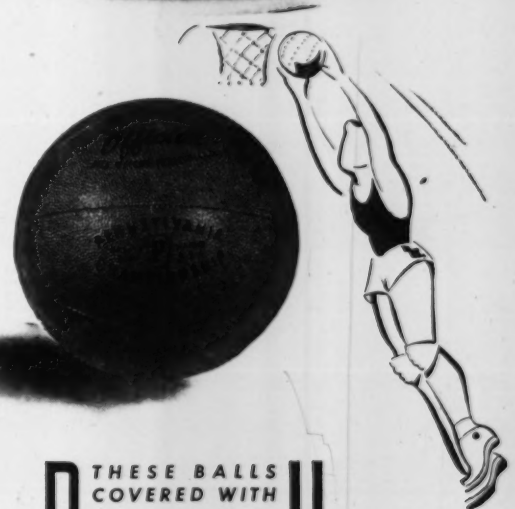
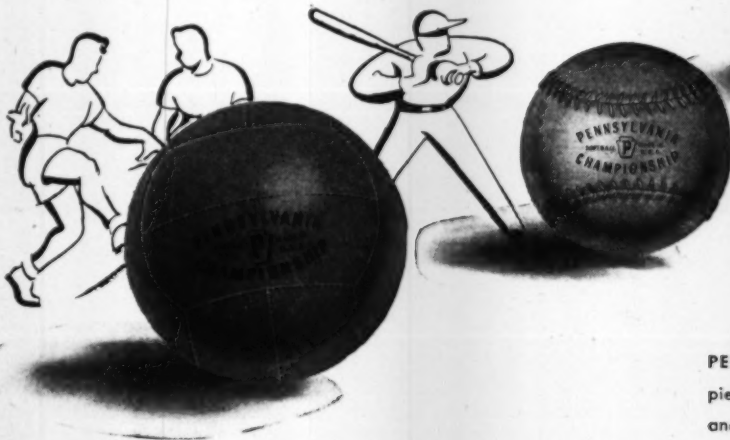


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of parking areas to accommodate an ultimate of 4,000 cars.

Site: In determining the size of site, consideration must be given to the space requirements of the building, its setting, parking and the possibility of expansion. Further provision should be allowed for the development of outdoor facilities to supplement the indoor functions of the project.

The site selected should contain a minimum of 60 acres but preferably 100 acres.

Organization of elements: While the central feature of this memorial will be the indoor sports center designed for athletic events and com-

munity use, the project offers possibilities of further expansion and greater usefulness.

Not only must the initial and detailed planning of the building consider the future growth of the city and county, but the entire area must provide sufficient space for facilities that may be needed now and in the future.

The accompanying chart has been prepared to show this organization of elements with a view to the great possibilities in the development of the entire project over a period of years.

This chart is purely graphic and designed merely to show how va-

rious facilities must be coordinated and organized.

The central feature is Unit No. 1, the Sports Arena seating 10,000 people and providing a wide variety of activities. A minimum of fifteen acres will be required for this structure and its appropriate setting.

Unit No. 2 is the swimming pool with spectator galleries. This can, of course, be incorporated within the building. But in order to provide year-round use it is far more desirable to develop it as a special unit on the ground floor. This would take advantage of the locker, shower and dressing room facilities in Unit No. 1.

It would have a large enclosed outside area designed for the exclusive use of bathers and provided with game courts, sand section and opportunities for sun bathing. This outside area would require a minimum of two acres.

Unit No. 3 might be the auditorium with stage designed especially for music, opera, drama, forum, lectures, etc., and again coordinated with Unit No. 1.

PROVIDES CULTURAL ACTIVITIES

This auditorium would provide all the necessary cultural activities in connection with a broad and diversified program. It could be designed with a flexible auditorium with due consideration given to the importance of acoustics and aesthetic treatment. The minimum seating would be 3,500.

By masking off the balcony and the area beneath the balcony, the auditorium can regulate its seating capacity to meet the requirements of the production.

There are certain distinct advantages in incorporating the auditorium in the over-all project. There is the advantage of the complete facility, both cultural and physical. Added to this are the existing parking areas that will not require duplication in another area.

The whole matter of control and operation is simplified under such an arrangement. There are many economic advantages in such a relationship.

At strategic and accessible points are four distinct organized parking areas, each one occupying approximately five acres of land and having a capacity of 1,000 cars. Thus 4,000 cars could be parked with ease.

The special interests of the agricultural and rural groups as well as the 4-H clubs will require facilities such as barns, stables, sheds, paddocks, etc. At least five acres of land will be required for this specialized use.



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VESTAL INC.
ST. LOUIS NEW YORK

Home on the Range

(Continued from page 14)

also be used. The targets should not be placed in front of any joints. High-powered rifles should not be permitted on any indoor range.

The side walls at the bullet-stop should be covered by $\frac{1}{8}$ in. or $\frac{3}{16}$ in. steel plate, 2 ft. wide and slanting with the back-stop, to protect against the splatter of lead from the back-stop. (See drawings.)

A layer of clean sand or sawdust, 6 in. to 8 in. deep, 5 ft. to 6 ft. wide and running the width of the range, should be placed on the floor in front of the back-stop to catch the bullets deflected by the 45° steel plate. Sawdust has an added advantage where weight must be reduced to a minimum. The sand or sawdust can be regularly sifted to salvage the lead for sale or reloading.

The bullet-stop described takes up about 6 or 8 ft. of floor space. This distance can be cut down to 3 or 4 ft. if several narrower steel plates are used to form a louver or venetian blind type of bullet-stop. (See sketch.)

On a small range where a great amount of firing is not contemplated, a considerable saving in the cost of the bullet-stop can be effected by using an earth-filled crib type of bullet-stop. The earth in the crib should be a minimum of 2 ft. in depth. The front of the crib should be of wood 1 in. thick, and these boards should be easily replaced since they will be rather quickly shot away.

The earth in the crib immediately behind the targets must be replaced and repacked at regular intervals; otherwise, the lead will bunch up and dangerous ricochets will result. This type of back-stop is safe but requires frequent repairs to keep it so.

The principal requirement of the non-fixed range—that all range fixtures be compact and movable—dictates the construction of a bullet-stop. It should be on rollers or casters or should be light enough to be easily carried out when the room is used for other purposes.

The drawings illustrate two methods of constructing a roll-away back-stop. While the length of the back-stop can be varied in accordance with the amount of available storage space, the targets should not be placed nearer together than 2 ft. The height and width of the back-stop will vary in accordance with the size of any doors through which it must pass.

It is important to cover the floor

BASKETBALL STAR 1948



THE *Acromat* TRAMPOLIN
 —GIVES LIFT TO GYMNASTICS
 —CREATES A NEW SPORT-ACROMATICS
 * T.M. REG.

Maybe that young fellow has his heart set on Basketball already and therefore welcomes Trampoline work-out as the best kind of training for developing poise and balance... to train him in his jumping... to take a fall in his stride. Maybe he has no idea that he possesses any athletic prowess at all... then as he works out on the Trampoline, he begins to find himself. Discovers that after all he isn't "all arms and legs"... that that seemingly boundless but untutored energy of his can be disciplined and directed while he's having fun learning knee bounces, turn and twist variations, cradles, somersaults, "cat twists," etc. Experts agree that the muscular development and coordination developed by Trampoline activity stands the athlete and the potential athlete in good stead for every kind of sports endeavor. Not only that, since it is in itself fun and fellows naturally take to it, the Trampoline is one of the best sources of discovering and developing promising athletic material.

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are now available dependent upon the supply of raw materials. It is apparent that the demand for these products in 1947 will exceed the supply.

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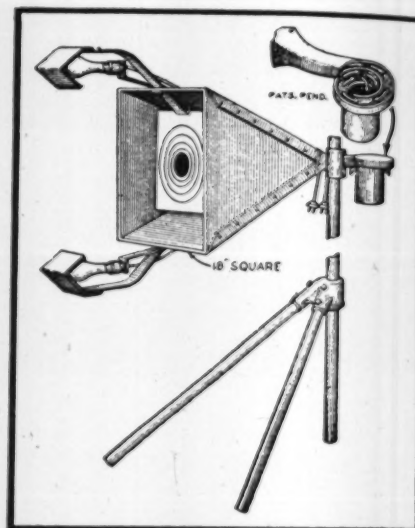
LEAVITT CORPORATION

(ESTABLISHED 1895)

BOX 33, URBANA, ILLINOIS

of a portable back-stop with some material (sheet metal, tar paper, linoleum, etc.), that will cover all cracks between the boards and prevent the sand from seeping through. The wheels should be 4 to 6 in. in diameter and should be equipped with rubber tires. Rubber tired casters work very well.

The double-tiered bullet-stop illustrated is similar to the one built at Chaminade High School, Long Island, and illustrated in the November 1945 issue of *Scholastic Coach*. It is somewhat more complicated than the single plate bullet-stop, but has the advantage of having the targets more nearly at eye level for prone and off-hand shooting.



X-ring centrifugal bullet trap.

For the small range with only several firing points, a light portable bullet-stop is quite satisfactory. (See drawing of X-Ring Centrifugal Bullet Trap.)

When this type of bullet trap is used, the wall behind the trap should be faced with wood 2 in. thick to absorb any wild shot which misses the relatively small area of the bullet trap.

Bullet deflecting plates. In both the movable and permanent range, it is desirable to have exposed pipes, conduits, beams, columns, lights, or any other projecting surface in front of the firing line, protected by steel deflecting plates to prevent damage by stray bullets or injury to persons.

Any window or other opening in the range in front of the firing point should be bricked in or covered with adequate shutters securely fastened. These shutters can be of steel plate $\frac{1}{4}$ in. thick or of wood 1 in. thick faced with steel $\frac{1}{8}$ in. thick. All doors opening into the range must be bolted from the inside, except those behind the firing line.

It should be remembered that



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CEDAR RAPIDS, IOWA

most accidents are due to carelessness and lack of intelligent forethought. The above precautions may seem elaborate and expensive, but safe construction is cheapest in the long run.

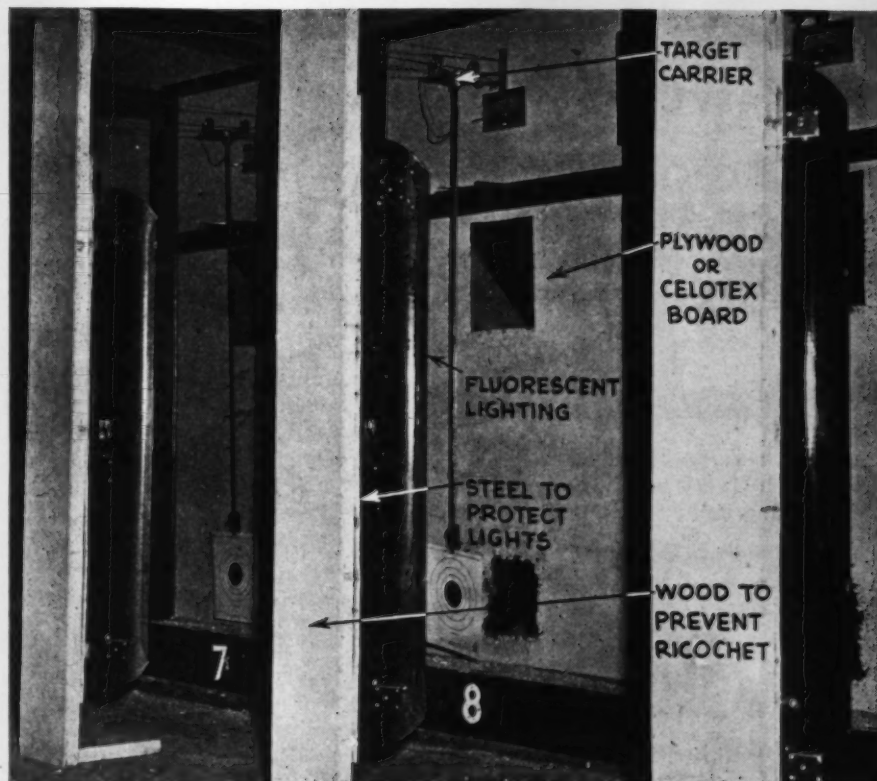
Lighting. In lighting the permanent range, the objective is adequate, uniform, non-glaring, shadowless illumination. The cavern-like gallery with bright lights on the targets only, with the rest of the range in almost total darkness, is a thing of the past.

It is generally conceded that the light conditions should approximate as closely as possible, ideal outdoor shooting conditions. The full-lighted range makes for higher scores and provides a safer and far more attractive place in which to shoot.

From the standpoint of creating comfortable seeing conditions and an inviting range, proper lighting at the firing point and down the range to the targets is essential. Complete range illumination is necessary to eliminate the undesirable contrasts between bright targets and dark surroundings.

With dark surroundings there will be frequent pupillary adaptation to the large differences in brightness with resultant eye fatigue followed by headaches and other manifestations of eye abuse.

Fluorescent tube lighting repre-



View of targets and lighting system at backstop.

sents the latest and most satisfactory development in range lighting. At the firing line there should be 15 to 20 footcandles intensity. This light should be totally indirect to elimi-

nate annoying reflections.

The intensity should gradually increase down the range to 70 or 75 footcandles intensity on the vertical target. By increasing the num-



**DO THE BOYS PLAY
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Your team wouldn't be worth a darn if they didn't "play for keeps." But that means injuries - bruises, sprains, strains!

That's where you come in, Mr. Trainer. These are your headaches. And that's when Antiphlogistine really does its stuff!

You know the value of Moist Heat applied over long periods of time.

Well, Antiphlogistine - a ready-to-use medicated poultice - supplies this helpful Moist Heat for many hours, without fuss or bother. It eases pain, helps reduce swelling, speeds up recovery.

Check your stock of Antiphlogistine now! Have it ready to meet the many emergencies that come up in your job.

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DUCOMMUN-MINERVA STOP WATCHES



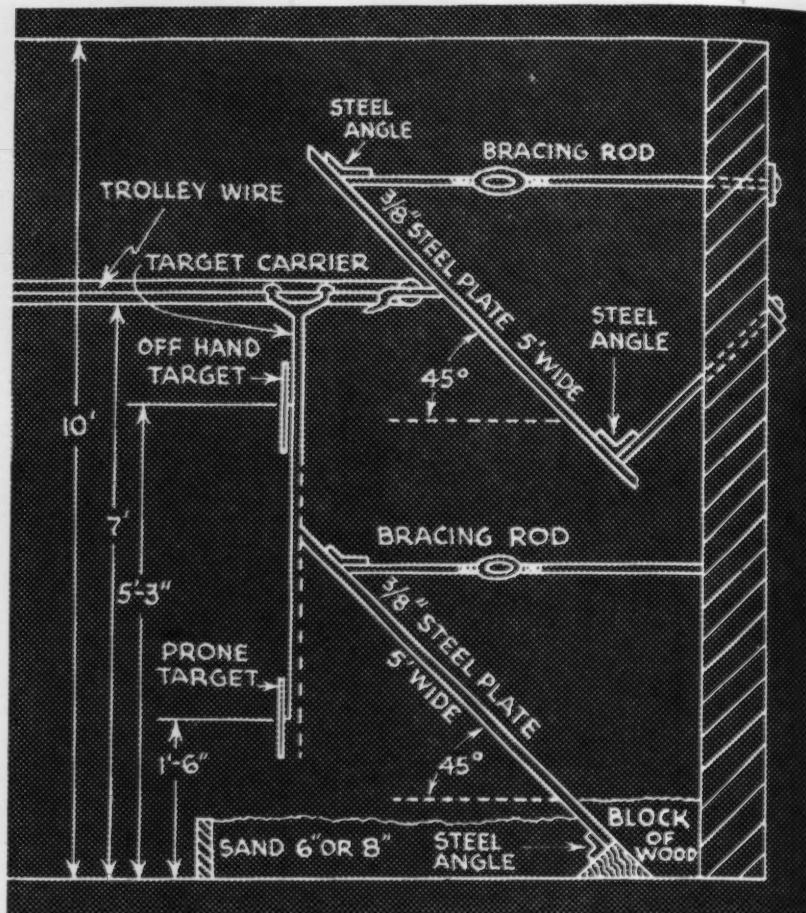
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Models for All Sports
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Design for Louver type of bullet stop.

ber of 48 in. concentrating asymmetric industrial type fluorescent luminaires at progressive points down the range, the desired intensities can be obtained. (See drawing of plan and section of "ideal" range.)

The fluorescent tubes and their reflectors must be protected by steel baffles or other means. Quite often ceiling beams or girders are so located that the lighting units can be placed behind them for protection.

The recommended lighting intensities can be achieved with flood-

lights and spot lights as well as with fluorescent lights. However, the economical operating expense and the long life of fluorescent tubes more than justifies their slightly higher installation cost.

The lighting recommended for the permanent range can be fairly closely duplicated on the non-fixed range by the use of portable lighting units.

(This article will be concluded next month with the details of a target-carrier system, firing point equipment, ventilation, acoustics.

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in finding a properly qualified instructor in my community ☐.

Send complete information on how to start a rifle program ☐.

Name of School _____

City _____ State _____

Enrollment of School: Boys ☐ Girls ☐.

Eating for Health

(Continued from page 36)

other student can make a report on the mineral salts and their specific function in the body.

GENERAL FACTS ABOUT FOOD

1. Sugars and starches (carbohydrates) are not in themselves harmful but their excessive use may lead to failure to eat adequate quantities of protective-foods (vitamin and mineral) or to overweight.

2. Foods that are wholesome when eaten alone do not become poison by simply mixing with other foods. Poisoning or injury from food combinations is unknown.

3. Moderation should be exercised in the use of raw vegetables. Excessive amounts may be irritating to the digestive system.

4. A person of sedentary habits needs nearly as much protein as a person doing hard manual labor but less carbohydrate and fat.

5. Occasionally foods that are wholesome and of high nutritive value for most people may, in certain individuals, cause physiological disturbances often referred to as allergies.

6. A nominal amount of table salt (preferably iodized) improves the nutritive value as well as the flavor of food.

7. Food eaten raw should be washed well with clean water to free it from harmful substances and injurious organisms.

8. The daily diet supplies some liquid and the water you drink when thirsty should supply you with the balance required for individual needs.

9. It is difficult to provide enough calcium so necessary to bones and teeth, unless milk is used in liberal amounts. Whole milk is our best single protective food. Pastuerized milk or milk from government inspected herds is safe to drink.

10. Cold beverages should be sipped slowly so that the digestive tract is not too suddenly chilled.

11. Water should not be used to moisten foods as it retards the action of the saliva on the digestive process. It should be cooled (but not iced) and free of contamination.

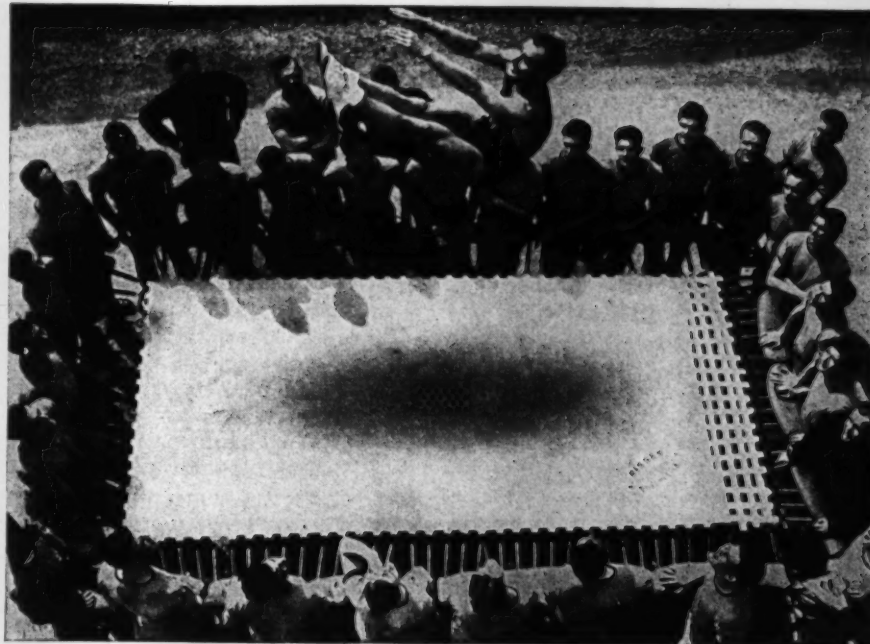
12. Candy should be eaten after meals, never before.

13. Too much fatty food may cause indigestion.

14. Every kind of food should be chewed well.

15. The food we eat should be suited to our digestive tract.

(Continued on page 52)



NISSEN for almost 10 years maker of America's first standard TRAMPOLINE and founder of TRAMPOLINING as a sport—now offers popular Model 5000-T* made with fine tubular steel and heavy, double canvas.

Price Complete **\$209.00** F.O.B. Cedar Rapids, Iowa

*The ORIGINAL standard Trampoline, improved and refined by Nissen engineers and craftsmen in test and research and proved by actual, exacting use during the last decade in gyms, and armed forces and at beaches, pools, camps and playgrounds. Write for free literature.

NISSEN TRAMPOLINE

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Take care of those Basketball injuries with L.A.T.A. of L.A.*

A new line of high quality trainers supplies, designed by Roland "Kickapoo" Logan, ex-trainer for West Point, Pittsburgh, George Washington and Kansas Universities, and the Boston Red Sox.



* LOGAN ATHLETIC TRAINERS AIDS OF LOS ANGELES

5015 Eagle View Circle • Los Angeles 41, Calif.

(Continued from page 51)

Next on the agenda is the hygiene of eating and elimination.

HYGIENE OF EATING, ELIMINATION

1. Good nutrition requires intelligent planning.
2. A regular schedule for eating is the first step in good digestion.
3. Frequent eating, between meals, may prevent one from getting hungry enough to do justice to the main meals.
4. Coffee, tea and soda pop have no place in the diet of an adolescent as they may take the place of much needed milk and other protec-

tive foods containing vitamins and minerals.

5. When unduly tired, it is well to rest before eating.

6. The practice of going without breakfast is unhealthy. Breakfast should include fruit or juice, cereal, an egg, bread in some form and milk.

7. The daily diet for the adolescent should include the following as a minimum:

- a. At least one quart of milk.
- b. One egg.
- c. One orange, grapefruit, tangerine or raw tomato.
- d. One or more servings of potato, preferably baked, eaten

with skins; and two other vegetables preferably green.

e. At least one serving of meat, fish or poultry. Meat substitutes may include cheese, beans, dry peas, peanut butter or nuts.

f. A whole grain cereal or bread.

g. Two or more servings of butter or vitaminized oleomargarine.

h. If the appetite is not satisfied, select more food from the above list.

8. Consult a reliable physician before going on a special diet.

9. Digestion takes place more readily if the food eaten is appealing in sight, odor and taste.

10. Over-eating should be avoided.

11. Neither hunger nor appetite can be relied upon as an absolute guide to eating.

12. A meal should be free from anxiety, worry and ill-feeling.

13. Hurried eating results in the swallowing of excessive amounts of air and imperfect mastication.

14. Continued discomfort in the region of the stomach should be investigated by a physician.

15. Vitamin tablets should be taken only on the advice of a physician.

16. Except on the advice of a physician, the use of drug cathartics for the relief of constipation is not wise.

17. Digestion of food is hindered if one is unduly tired.

18. One should never take a cathartic in the presence of abdominal pain.

19. Habitual poor posture is a hindrance to proper elimination.

20. In using public toilet facilities, care should be taken to avoid direct contact with the toilet fixtures.


21. Studies have proven that smoking interferes with the hunger reactions of the digestive tract. This is one of the best reasons for adolescents not smoking.

22. Exercise daily to strengthen the muscles of the abdomen and the muscles of the alimentary tract.

23. Proper care of the digestive tract includes adherence to hygienic practices of sleep and rest, proper exercise, exposure to sunshine and fresh air, the avoidance of disease and being emotionally stable.

24. Alcohol and highly seasoned foods are to be avoided. Alcohol is a narcotic and highly seasoned foods may irritate the digestive tract.

25. Caloric needs are determined by physical activity, age, sex, growth, climate, season of the year, and daily habits.



**TO THE MAN
BEHIND THE TEAM...**

Wagner*

PRESENTS AN

"ALL-STAR" Sports Line!

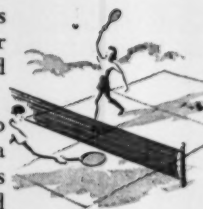
It's a *quality* line that's become an outstanding favorite with athletic directors and coaches who depend on the Wagner trademark for exceptional durability and long-life in canvas.

It was Wagner who showed the way to greater safety . . . greater savings with a new and economical gym mat that stands up under the daily wear and tear of gym activities. This Wagner quality mat is double-tufted and compression tied, yet soft, safe and needle free. Covered with No. 6 or No. 8 sturdy duck and filled with genuine gym mat felt or 100% goat hair as desired, Wagner gym mats are available in all popular sizes.

You'll find greater satisfaction too with Wagner-made archery target covers, heavy bags, tennis nets, shower curtains and field enclosures. And Wagner has a complete line of flags and pennants for every possible use.

Before you make your next "buy" write for full information on the complete Wagner sports line . . . a line that's made to *stay durable longer*.

**The name that stands for the finest in canvas.*



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**WAGNER
CANVAS
PRODUCTS**

COMMON DEFECTS

1. **Malnutrition** is poor physical condition caused by not eating and digesting enough of the right kinds of food for the needs of the body.

2. Deviations of growth that cause concern should be investigated thoroughly. Too large a discrepancy from normal growth as portrayed by authentic height and weight charts, should require investigation by a competent physician.

3. **Constipation** is a condition of the large intestine in which foods do not pass through easily.

4. **Diarrhea** is a condition of the large intestine in which foods pass through too watery and too frequently.

5. **Dyspepsia** is difficult or painful digestion.

6. **Dysentery** is an inflammation of the large intestine characterized by diarrhea and blood in the stool.

7. **Indigestion** is defective digestion.

8. **Diabetes** is a disease in which a person's system cannot use the starch and sugar of the food eaten. A urinalysis detects this disease.

9. **Nausea** is the feeling of being sick to your stomach and wanting to vomit.

10. **Rickets** is a disease of early childhood usually caused by a lack of calcium, phosphorus and vitamin D in the diet.

11. **Typhoid Fever** is a serious disease affecting the intestines. It is caused by a germ usually taken in with food and drink.

12. **Allergy** is exaggerated sensitivity of the body to a foreign protein such as egg, milk, meat or pollen.

12. **Appendicitis** is an inflammation of the appendix located in the lower right section of the abdomen where the small intestine empties into the large intestine.

14. **Bright's Disease (Nephritis)** is a kidney disease attended with albumin in the urine.

STUDENT ACTIVITIES

There will probably be little time to spend in extra activities for this unit. A great deal of thought-discussion material is provided.

Most schools provide an entire term toward achieving the objectives of this unit, and it is time well spent. If there is additional time, the following activities are suggested.

1. Have a student report on the National Food and Drug Act.

2. Have a student report on the work of the local Board of Health

in the supervision of food and food handling.

3. Have an athlete report on the diet prescribed for varsity team members.

4. Have a committee report on sanitary conditions in the school cafeteria and local lunch rooms.

5. Have a student calculate the number of calories he needs based on an average day's activity.

6. Have a committee report on accepted table manners.

7. Have a committee examine various advertisements and radio commercials and report their findings and opinions.

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5. Fishbein, Morris, *Your Diet and Your Health*; Whittlesey House, N. Y., 1937.

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Coaches and athletes in the know

ask for Amco, the blue-ribbon sports apparel line

that's tops in its class for crack tailoring, functional

design, trim, attractive lines. Write for the

name of the Amco dealer in your locality.



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CHOLLIE STERN-

Please send all contributions to this column to Scholastic Coach, Coaches' Corner Dept., 220 East 42 St., New York 17, N. Y.

Huff, puff, huff, puff. Remember all that stuff about coaches burning out boyhood? Well, Nick Kearns, the veteran midwest official, now alleges that basketball is burning out officials. Life ends at 30, toots Nick. "With the stepped-up game of today, it's almost a physical impossibility for a man in his early 30's to keep up with play in the waning moments."

Should our whistle tooters be retired at 30, and sent to the Mayo Clinic to get their gas checked? No, no, says Nick. All he suggests is the addition of another official. "A basketball floor has about 4,500 square feet. Three officials could divvy the court into three parts and patrol just 1,500 feet."

Al Schacht, the baseball clown, insists that his grandpa was a major leaguer, too. One day an opposing pitcher dusted off Gramps at the plate. The ball coked Grandpa Schacht with a resounding crash, and turned into the most sensational home run on record. Yes, sir, claims Al, it sailed over the right field fence and won the game.

At this point some literal-minded female will invariably exclaim. "What nonsense! How could a man hit a ball over the fence with his head?"

"You didn't know Grandpa," is the Schacht clincher. "He had bats in his belfry."



Needing a player desperately for a crucial playoff game in the local pro league, Coach Mildew, a fine old gentleman, the epitome of gentleness and mildness, decided, although hesitantly, to call on Joe Hardnutt, a great player but a no-good guy.

Well, the first day Hardnutt showed up egregiously inebriated. The second day he was caught rifling a teammate's locker. The third day he incapacitated the team's star passer by



kicking him in the groin. And on the fourth day, he was nabbed accepting a bribe from a big-shot gambler.

This was the last straw for the mild, gentle old coach. He stepped up to Hardnutt, shook his fist into the air and roared, "Some day, Hardnutt, you're gonna go too far!"

"**Christian Brothers** (Sacramento, Calif.)," writes Coach G. F. Liegerot, "claims the distinction of being the most poorly equipped school in America. With 85 candidates for football, we must conduct our training with just two footballs, no blocking or tackling dummies, no charging sled

Coaches' Corner

and just one coach. To top it off, we have not purchased a single pair of pants in several years. Those we have are sewed, patched and taped up so much they look more like potato sacks than football pants.

"How did we do last season? We won 11 games!"



Coach Liegerot also tells us that the Brothers B team participated in a play to end all plays, last season. An Oroville back named Harris passed to himself for a touchdown! A snap pass by Harris was deflected high in the air by a Christian Brothers' guard, who dashed under the ball, caught it but bobbed it again—straight into the hands of the passer, Harris. Mr. Harris then streaked down the sidelines to pay dirt.

One of the best stories of the year comes from Coach Jimmy Austin of Haynesville, La. "I was having a tough scrimmage one afternoon when one of our defensive guards was hurt. I called on a big but green country boy to take his place. The offensive quarter began throwing plays at the new guard. Each play kept going for considerable yardage. Finally, I called to the boy to get in there and make some tackles.

"The boy looked up at me in utter amazement. 'But, coach,' he said, 'I'm not playing tackle, I'm playing guard!'"

Our old physical educator friend, Albert B. Wegener of Madison, N. J., in a fit of whimsy, sent us two advertisements clipped from *Scholastic Coach*. "Hey," he writes, "how come these advertisers call this piece of gym apparatus 'new'? Why it was 'new' in my old gym days, and that was 1889 to 1935. One advertiser calls this apparatus the 'Trampoline.' Wow! Isn't that a knockout? The other name is also high-falutin'—'Acromat.' Why can't they call it something simple, like 'Bounce Mat' or 'Gym Bounce' or 'Bouncer'? Will you please pass my recommendations on to the manufacturers?"

Reserve Coach Max Rezek of Northeast High School, Lincoln, Neb., offers his contribution to our believe-it-or-not file. In a game against the Nebraska City High B team, the Allen twins of Northwest took complete charge of the kickoffs. Bob Allen took the opening kickoff back 90 yards for a t.d., while twin-brother Dick grabbed the second half kickoff and raced 75 yards for another six-pointer.


After coaching and refereeing up North for the past five years, Eddie Boell, the ex-NYU all-East fullback, is now ensconced at Eustis, Fla., High School and already has been involved in a series of comic episodes. In his team's first game, the referee called three "backfield-in-motion" penalties against Eustis because "the man in motion wasn't five yards back of scrimmage!" Special time-keepers, who paraded all around the field, used a broken watch and the first quarter ran 45 minutes, including penalties, time-outs, etc. Down South, suh, life is different.

And here's a hall-of-fame entry from Coach Walter N. Griffin, of Missoula (Mont.) High. He tells us that his end and captain, Dell Tyler, has won four gold footballs for having played on the Missoula state football champs four straight years. What's more, he has made the all-state team three times. Isn't that a record for a high school player? queries Coach Griffin. What have you other coaches to offer along these lines?

Prize bobble of the past football season was pulled by the Brown band. These absent-minded tooters marched in front of the Harvard stands and proudly formed a large "Y"!

The Antioch (Calif.) High School Panthers keep rolling along. Coach Jack Danilovich's gridders have now hung up 19 straight wins in regular season play. According to Antioch's proud and hard-working sportswriter, Mayer Wolfe, Antioch placed two linemen and three backs on the all-county team. That's almost par for the course.

(Continued on page 61)



BROOKS


Manufacturers of the **FINEST**
Leather Top Basketball Shoes

These Shoes have become standard as
Athletic and Physical Fitness Shoes in
Military Training Camps. Colleges and
Schools throughout America.

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WITH THE PATENTED LOCK-TITE CLEAT WASHERS AND RACKET
NUTS THAT PREVENT FOOTBALL INJURIES.



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A GOOD START!

Schools across the nation are finding that they are off to a good start in their athletic program with the installation of the economical McArthur School Towel Plan. For durable McArthur Super-Gyms and Super-Turks, though soft and absorbent, are made to withstand the rugged daily usage required by athletes everywhere. For information and availabilities, write Geo. McArthur & Sons, Inc., Baraboo, Wisconsin.

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QUIET, QUICK-DRYING, TROUBLE-FREE!



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Now . . . a fully-tested heavy-duty hair dryer built for hard, continuous service in schools and clubs. Dries hair thoroughly in 3 to 5 minutes! *Reduces colds.* Speeds locker room traffic. Safe, quiet, rugged, efficient, dependable! Fully guaranteed. Write for present prices and quick delivery schedules.

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Please rush present prices and delivery schedules on Electric-Aire heavy-duty hair dryer.

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National Federation News

MANY progressive state associations have probably wondered whether their efforts in providing extra services have been fully appreciated by the member schools. Judging by the action of a group of Iowa high school administrators, the answer is yes—and very definitely.

The Iowa committee, made up of three city school superintendents, was appointed to audit the business affairs of the state association. In their auditor's report, they included the following commendatory statement:

"We commend the Board of Control, the Executive Secretary and the Office Staff for their correct, adequate and complete records; for the policy of using part of the increased income for increasing the allowances to participants in the state-sponsored meets and tournaments; for their good judgment in purchasing a building (cost price, \$30,000) for the state association offices; and for the progressive policy of using surplus income to increase the service and broaden the scope of the state association."

Somewhat similar statements of appreciation have been made by groups in Minnesota, where the association officers have been commended for employing surplus funds to stimulate interest in some of the minor sports such as tennis, golf and ice hockey.

Tennessee: The state news bulletin contains a plea for assembly programs and pre-game demonstrations to acquaint students and fans with the aims and ideals of the school athletic leaders and with the contest rules of the current season.

West Virginia: The state association now has a full-time officer—executive-secretary W. R. Fugitt of Beckley. A man of wide experience, Mr. Fugitt has had high school and college training in Ohio, West Virginia and Georgia, and has served as athletic coach, principal and county supervisor. He has also been on the administrative staffs of several industrial firms and has been secretary of the Beckley Chamber of Commerce.

Alaska: High schools are becoming increasingly interested in the state-wide and nationwide programs of the state associations. They are already using many of the National Federation publications and have leased prints of the new football and basketball rules films. They are now considering a plan of affiliated membership whereby the group would have the same status as New Brunswick, Canada, which has been an affiliated member for the past several years.

Maine: Chalk up another first for

the Pine Tree state! Maine was the first of the New England states to adopt the Federation football rules. And now it is planning to institute a full-time office to administer the affairs of the state association.

This plan has been approved by the executive committee and by the schools in a preliminary poll. To go into effect, the plan requires a second vote at the spring meeting. If the vote goes as expected, Maine will be the first New England state to possess a full-time staff.

Annual meeting: The National Federation annual meeting in St. Petersburg, Fla., on January 8-11 brought together representatives of most of the 44 state associations which make up the Federation. Everything having to do with rules, regulations and policies were thoroughly aired and will be reported in the next issue of *Scholastic Coach*.

Bowling: The American Bowling Congress is a large national organization with a membership of about 15,000,000, which embraces practically every reputable bowling establishment.

In past years, many high school groups were affiliated to the A.B.C. in a national organization called the American High School Bowling Congress. Because these schools competed in a number of sectional or national meets, the attention of the bowling authorities was called to sanction requirements. Several of these meets were held without sanction.

The problem has now been constructively and happily solved. The bowling fathers have set up a special division to supervise youth activities and to provide a program which will not conflict with school policies.

Milton Raymer, a Chicago high school man, has been placed in charge of this division. He and his group of advisors want to cooperate with the high school group to avoid conflict with their regulations.

One of the first steps in this direction was a recommendation to drop the name American High School Bowling Congress.

The program as envisioned by Mr. Raymer and his group is designed to encourage young bowlers to compete as individuals or club representatives rather than as representatives of their high schools. For interscholastic meets, the high school conference or state association shall be in charge, with the A.B.C. units assisting in any way which meets the approval of the high school group.

At the annual meeting of the A.B.C., the recommendation for change of name and for adherence to high school regulations was unanimously approved. The youth organization will henceforth be known as the American Junior Bowling Congress. The organization is urging elimination of money or merchandise prizes for junior bowling, and will not sanction events which offer such prizes. All national high school tournaments are being eliminated.

—H. V. PORTER



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Trade-Mark Reg.

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*"Here's a Mat
that's Bound
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... says **JOHN WALSH**, famous University of Wisconsin boxing coach who has produced 17 individual National Champion Boxers.

Like any active sport, boxing can be dangerous if simple safety rules are not applied. One of the first rules in boxing is a good, safe mat. NATIONAL mats are made with full 2" of

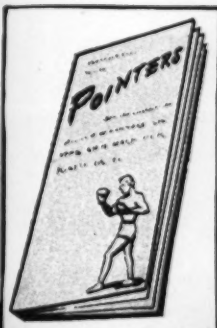
extra-resilient layer-felt . . . produced by the platen process as an additional safety measure. There are no safer mats than NATIONAL GYM MATS.

HAVE YOU SENT FOR THIS FREE BOOKLET?

Just off the press . . . John Walsh's new important booklet, chock full of valuable facts on getting your High School Boxing Program under way is yours for the asking. It clears up numerous misconceptions about boxing . . . especially valuable to newcomers in the program.

NATIONAL SPORTS EQUIPMENT CO.

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Makers of Gym Mats, Boxing Rings and Kindred Equipment



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By Wilbur D. West

Teaching hints for over 200 exercises and
stunts. Illustrated.

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Send for your approval copies

PRENTICE-HALL, INC.
70 FIFTH AVENUE, NEW YORK 11

NEW BOOKS

YELLS FOR HIGH SCHOOLS.
Compiled and Originated by Melba J.
Burwell. Pp. 126. Illustrated—photo-
graphs. Cedar Rapids, Iowa: The
Heuer Publishing Co. \$1.

HARASSED faculty advisors of cheerleading squads will probably burst out with a loud "allaganee, genac, genac" upon flipping open this superb little collection of select yells gleaned from hundreds of high schools throughout the land.

The yells are expressly designed for high school use. The actions for the simpler yells are left to the reader. For the more difficult cheers, complete instructions for leading are given. Exactly 301 yells are presented.

Here's an idea of how the cheers are projected:

Whiskum, biskum, hold'em!
Don't let'em make a score.
What about Name?
Well, that's different!
More, more, more!

(Instructions: Make each word in the first line definite with a pause following. Yell the second line fast and pause. Yell the question, stop for a silent count of 1-2-3, and in a Mae West conversational tone, say the fourth line. End with yelling fast and accenting each word of the last line.)

Along with the yells is an excellent section on ways of advertising games, a complete pep club constitution, a point system for pep club applicants, helpful hints on cheerleading, and a bibliography of stunts and entertainment to create interest in athletics and to raise funds.

(See ad on page 48)

FAMOUS PLAY PATTERNS. Com-
piled and Edited by Hank Luisetti.
Pp. 34. Illustrated—photographs and
diagrams. \$1.

THE greatest basketball player of the generation, Hank Luisetti, now turned diagram board manufacturer, has done a fine job of compiling and editing the pet play patterns of 24 of America's outstanding college coaches.

Among the famous coaches represented are: Phog Allen, Sam Barry, Clair Bee, Howard Cann, Everett Dean, Hec Edmundson, Loren Ellis, Harold Foster, Pops Harrison, Howard Hobson, Hank Iba, Ed Krause, Piggy Lambert, Joe Lapchick, Doc Meanwell, Doug Mills, Vadal Peterson, Nibs Price, Adolph Rupp, and Ev Shelton.

The book is 11 by 8½ in. in size, attractively organized and concisely and clearly written. Every coach will find a mountain of helpful information in it.

Although Luisetti offers this book along with his diagram board (see ad on page 28), extra single copies may be purchased for \$1 each.

It's not too late to start
a record of your

1946-1947 Athletic Activities

USE THE CAPITAL
ATHLETIC RECORD

25 full page forms make
record keeping easy

Table of Contents:

Eligibility List Data
Inventory of Equipment
Financial Accounting
Competition Record
Awards Record
Football (27 pages)
Basketball (58 pages)
Baseball (31 pages)
Track (13 pages)

Demand for the book has far exceeded expectations. The third printing will be off the press about February 1st. Most dealers have books to supply their customers.

W. H. PAYNE

Carrington, North Dakota



\$6.75

This simply constructed, efficient knee brace can be adjusted to meet the requirements of any individual knee injury.

Stock this item

Prompt application reduces hazard of permanent injury.

Patent No. 2,270,685

Purchase From Your Sporting
Goods Dealer or From

THE MILLER CO.

REINBECK, IOWA

Descriptive Literature Sent Upon Request

Visual Aids

(Continued from page 11)

slide films have from 30 to about 50 individual pictures, captions, or pictures and captions combined.

While only one picture is shown at a time, a mere turn of a knob enables you to show the next picture or turn back to the previous one.

A complete sequence of plays can be shown on one slide film of 45 individual frames or pictures. Individual skills may be shown with a sequence of six or ten of these pictures. A diagram takes only one frame.

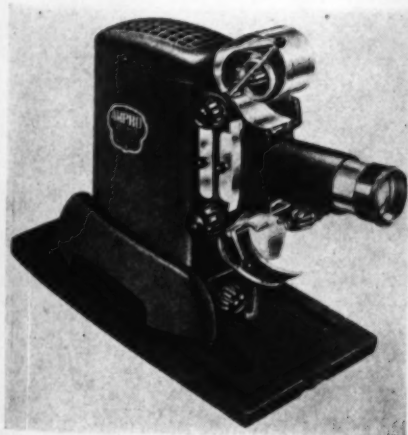
Slide films are now being made in color. Besides being more easy on the eye, these color slides help highlight the more important phases of the action being shown.

The slide film projector, having fewer parts, is much less expensive than the motion picture projector. The former, moreover, throws a very clear image on the screen and can be used for large audiences.

Each picture may be held on the screen for any length of time, enabling the coach to describe comprehensively the technique being illustrated. These slides films usually come with supplementary teaching guides or manuals.

This visual medium was used successfully by our military in teaching men how to handle guns or how to run certain types of machines that required step-by-step analyses. It was also used in vocational training classes to teach boys and girls how to operate the many complicated machines in war plants.

While slide films cannot show sequential motion, they are ideal for detailed study. They are very economical in that nearly a half hundred pictures and captions may be transposed on a strip of film less than four feet in length.



Dual purpose slide projector in operating position for 35-mm. strip film.

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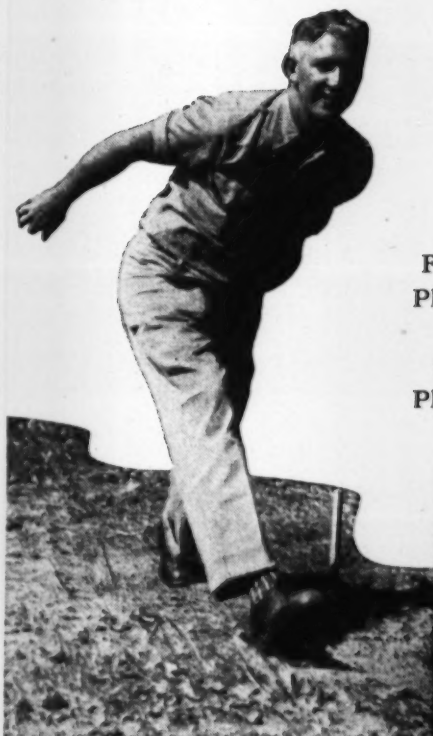
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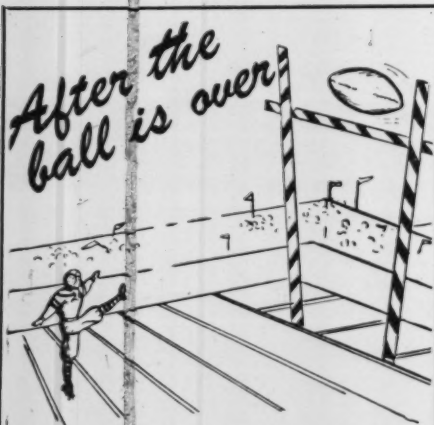
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Trampoline Stunts

(Continued from page 29)

started. Throw the head and arms upwards and backwards. After the somersault is started bring the knees to the chest and complete the backward somersault to the feet.

Try this stunt at first in a semi-tucked position. Do not grab your knees but throw extra hard with the arms in a backward and upward circle. Be sure to have a spotter standing on the canvas with the performer to assist him over the first few times.

Front Somersault: On the take-off bounce, lift with the arms and bend the body forward at the hips. Throw the arms and head downward and backwards and whip the legs backwards and up over the head. Complete the somersault and land on the feet.

A spotter's assistance is very important on this stunt also.

Back Somersault to a Seat Drop: Turn the back somersault slightly farther than for a single back somersault. Miss the feet and land in a seat drop position with the hands on the canvas behind the buttocks. Keep the head and shoulders forward on the seat drop landing.

Front One and One-Fourth Somersault to a Front Drop: Turn the front somersault slightly farther than for a single front somersault. Miss the feet and open up to a front drop position.

At first this stunt should be tried to a hands and knees landing. After several successful hands and knees landings then open up to a front drop position.

Half Back Somersault to Front Drop: On the take-off lift the hips forward, upward, pulling the shoulders back and the arms up and over the shoulders. Snap the head back, emphasize the arch of the body. Watch for the canvas and then "kill" the backward spin and flatten out to a front drop position.

At first this stunt should be done to a hands and knees landing. After several successful attempts at landing on hands and knees simultaneously, try it to a front drop landing.

Back Somersault into a Front Somersault: After the completion of the back somersault, bounce immediately into a front somersault. On the back somersault land in a forward leaning position. This facilitates the execution of the front somersault.

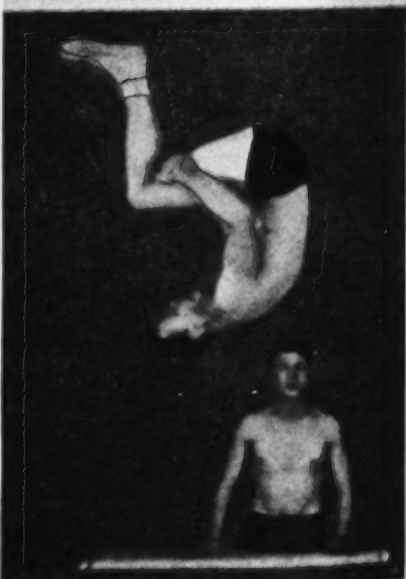
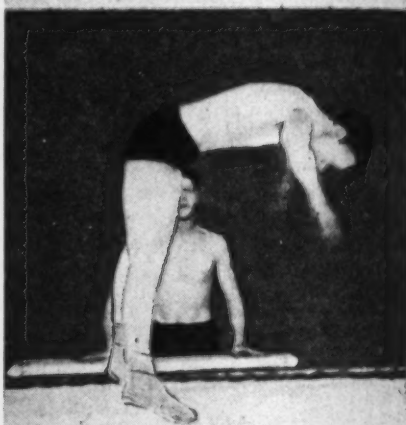
Some advanced stunts follow:

1. Front one and one-fourth somersault with half twist to back drop.

2. Back one and one-fourth somersault to seat drop back pull-over to feet.

3. Front somersault with a one-half twist.

4. Barani (roundoff without the hands).



Front Somersault

5. Barani into a seat drop.
6. Two back somersaults in swing.
7. Two front somersaults in swing.
8. Barani into a front somersault.
9. Back somersault into a Barani.
10. Barani into a back somersault.
11. Front somersault into a back somersault.
12. Back somersault with half twist.
13. Front double somersault to a seat drop.
14. Front one and three-fourth somersault to back drop into front one and one-fourth somersault to feet.
15. Back one and one-fourth somersault with half twist to front drop.
16. Series of back somersaults.
17. Alternates — back somersault into front somersault, repeat, etc.
18. Series of front somersaults.
19. Back somersault with full twist.
20. Front somersault with full twist.

Coaches' Corner

(Continued from page 55)

Add screwy plays: Mike Grady, third baseman for the 1895 Giants, attempted to field a grounder. He fumbled it, enabling the runner to reach first. Then Grady made a wild throw to first, allowing the runner to reach second. The first sacker recovered the ball and threw to Grady to head off the runner trying for third. The ball beat the runner, but Grady fumbled it. The ball rolled away and Grady scrambled for it as the runner streaked for home. Yep, you guessed it, Grady threw the ball over the catcher's head.

Totals on the grounder: No hits, one run and four errors by Grady. The last time anyone saw Grady he was drawing a sharp razor across his lily-white throat.

Maybe the following item doesn't belong here, but since we found it on the sports pages of the local gazettes, it may be justified. The clipping states that Luis Carrizales, of Des Moines, recently became a father at the age of 87. His 22-year-old spouse presented him with a husky son weighing nine pounds, 11 ounces. Carrizales' eighth child, a girl, was born a year ago. His seven other children, by previous marriages, range in age from 50 to 65.

When quizzed by the sportswriters, Carrizales attributed his success to the fact that he chops wood and chins



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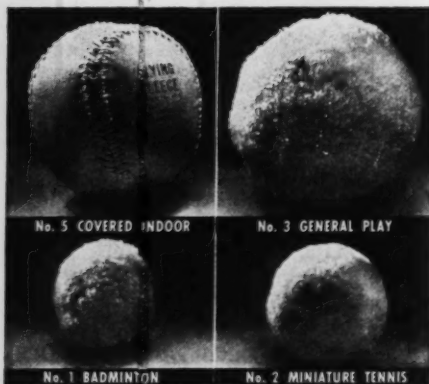
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Try it yourself some time. You may not win many games, but you might help bring vaudeville back.

Somebody ought to start educating our high school youths on the football rules. In a quiz in our sister publications, *Scholastic*, *Junior Scholastic* and *World Week*, we asked: "How many points are awarded for a touchback?" The answer, of course, is none. Despite the fact that we gave the correct answer, a swarm of kids wrote in to tell us we were all wet. One kid said, "Mister, you're cockeyed. A touchback counts two points." Another youngster wrote, "Where did you learn your football? Everybody knows a touchback is worth three points."

The big fullback had only had two dinners that day and he gazed with undisguised envy at a big sirloin steak that had just been put in front of his teammate—the right tackle. "Don't tell me," pleaded the fullback, "that you are going to eat that huge steak alone?"

"No," said the tackle, tucking his napkin carefully under his chin. "With potatoes."

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(Continued from page 5)

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three classes and three teachers. Privacy can be provided for these long, narrow rooms by draping a canvas curtain from the girders to the guard rail, or installing a folding door along this same span.

There are but two or three physical education activities that require a large floor and a 20-foot ceiling. With proper planning, dozens of other activities can be efficiently conducted on floor space made available by folding bleachers:

Tumbling, weight lifting, boxing, wrestling, balancing, rope climbing, rope spinning, rope skipping, baton twirling, flag twirling, gun spinning, juggling, bowling duck pins, dancing, marching, modified handball on the bleacher fascia boards, peg-boards, archery, riflery, badminton, shuffleboard, table tennis, trampolining, side-horse, long horse, buck, spring board, parallel bars, horizontal bar, rings, trapeze, air-wheeling, and ladders.

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If the double-deck arrangement is also used on the ends of the basketball court, this bleacher space can serve as an indoor running track all around the gym.

The larger schools should build three floors for three tiers of roll-away bleachers. Bleachers may then be installed as needed. Thirty-six rows of bleachers around a maximum size basketball court will seat a lot of fans, but still won't hold them all when, say, Centralia is playing Pinckneyville for the championship.

Several school architects believe that horizontal floor space, vertical walls, and folding bleachers, will cost a smaller total amount per seat than oblique patterned, concrete, permanent bleachers. Add to this the value of floor space all through the school year, for activities that will make the athletic program more effective—and building plans can take no other course.

In addition, every square foot of floor space under the bleachers is usable for physical education activities. Under the floor supporting the bleachers, you can build equipment rooms, storage space, and locker rooms. Every inch of this space is usable because the ceilings would be horizontal instead of oblique.

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